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**Learning from Nursing Placements:
A Longitudinal Study of the Influence of Nursing
Placements on Achievement Goals and Professional Self-
Concept**

Meng-Yin, Lin

**A Thesis Submitted in Fulfilment of the Requirement for
the Degree of Doctor of Education**

School of Education

Durham University

2015

Declaration

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Acknowledgement

I would like to extend my gratitude to a number of people, without them this thesis would not have been possible.

First, I would like to thank my supervisor, Professor Richard Remedios for his feedback and insightful advice. I would also like to thank my second supervisor, Dr. Julie Rattray.

Her patience and moral support mean a lot to me. Massive thanks also go to Dr. Phillip Callaway for his technical support and Dr. Eric Anane for being a good statistics teacher. I am especially grateful to all the participants in this experiment for their contribution.

In particular, I appreciate that I have good friends. Anna, thank you for the company during the difficult period, and Costas, thank you for making this journey unique. Last but not the least; I would like to thank my family for their unconditional love. They are the reason for me to carry on.

Abstract

This research aims to understand how the experience of placement influences nursing students' self-concept and their achievement goals. The relevant literature suggests that the current shortage of nurses is a consequence of low professional self-concept, which is also related to how nursing students' achievement goals alter before and after clinical learning settings. Research to date has yet to examine how the experience of placement influences nursing students' self-concept and their achievement goals. Applying quantitative data analysis, this thesis addresses how first-time nursing placement influences nursing self-concept and achievement goals as well as the relation between achievement goals and students relationship with staff. 276 Taiwanese nursing students completed two questionnaires, Achievement Goal Questionnaire (AGQ) and Nurses' Self-Concept Questionnaire (NSCQ) at 3 different time points over a period of 7 months.

The results suggest as follows. First, students had higher self-concept of staff relations after placements, though no other self-concepts increased. Because of this result, the current thesis will specifically discuss nursing students' confidence development on staff relations. Second, mastery approach goal reduced after placements and

performance goal remained stable. Third, a moderate positive correlation between mastery approach goal and staff relation was found in the group who stayed in classroom, while such correlation was very weak in the group who attended placements during this research.

Given the literature has demonstrated anxiety and fear of failure are students' common challenges during placements, this research supports that the participants' anxiety and feeling of incompetence diminished their desire to mastery nursing. Additionally, the findings appear coherent in terms of students' progress during the placement. The nature of clinical placements is performance oriented; however, in the current experiment, students' confidence in nursing skills and knowledge did not change. This result indicated students' perceived competence did not alter because of the placement; their performance goals therefore remained unchanged. Furthermore, the incline of the confidence in staff relations after placement suggests nursing students understood they needed to bond with staff before learning to be a nurse. Such result is in line with the literature that novice is aware of the importance of being accepted by the team because being accepted is a prerequisite for learning. Despite empirical studies noted that mastery goal has positive correlation with interpersonal relation but the third finding pinpointed that in addition to mastery goal whether or not the individual has found sense

of belonging in the group should be taken into account when examining how achievement goals influence interpersonal behaviours.

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Chapter 1 Introduction

1.1. Introduction

Nursing recruitment in Taiwan has been a concern in health care industry due to the high demand of professionals to take care of the aging population-a phenomenon which seems to be global. Consequently, there has been urgent need for nursing recruitment and training for qualified nurses. Difficulties in recruitment and low retention rates are the major causes of the current nursing shortage in Taiwan (Chang, Li, Wu, & Wang, 2010; Kuo, Lin, & Li, 2014).

This thesis asks why nursing recruitment is so challenging and why new nurses leave the profession having only worked for a short period of time. The fact that hospitals are unable to recruit new nurses and encourage staff to be more committed to their job is a worldwide issue.

In 2006, at least 57 countries were reported by WHO to be facing serious shortages of trained nurses. In the UK, it has been estimated that the NHS is likely to be short of approximately 47,500 nurses by 2016. This shortage issue has become part of an important agenda in the health care industry in Taiwan because there is a growing aging population (aged 65 and over) in Taiwan. In 1993, the elderly population was 7% of the total population, by 2008, it had increased to 10.4%. The report from the Council for Economic Planning & Development in Taiwan (2008) predicts that the figure might double to 18% by 2025. This can lead to serious consequences because, due to the difficulties in recruitment and low retention rates, an inadequate nursing workforce may be unable to meet the demand from the aging population.

One of the reasons for the nursing shortage in Taiwan is that new staff members are unable to commit to their job. The turnover rate among first year nurses in Taiwan is between 8.13% and 27.8%, which is higher than that of Japan and Singapore (Cheng, Liou, Tsai, & Chang, 2014). Nursing jobs are known for being stressful and challenging, particularly for new staff; nevertheless it is educational institutions' and nursing teachers' mission to help students see the stress in the nursing profession and to teach them how to cope with the demands, which is the main purpose of nursing placement. In classrooms, students are not provided with a chance to collaborate and put nursing knowledge into practice (Billings & Halstead, 2013). Nursing placement offer the training that students can 'integrate the theory and practice of nursing while helping them transform into professional nurses' (Yuan et al., 2011, p. 577).

After years of training, if students are able to see what challenges they must face and are supported by their teachers in order to cope with these stresses, nursing students should experience less of a reality shock (Cowin & Hengstberger-Sims, 2006) and therefore be more able to have a smoother transitional period and a higher chance of remaining in this profession.

The stress and reality shock of nursing jobs do not simply occur after students become fully trained staff members; they also face challenges while learning even in their first time

placement and their mind set in this profession starts to develop depending on their experiences on placement. This thesis focuses on clinical placements that offer essential learning during a nurse's education. Placements provide students with a unique opportunity to experience and explore the nursing profession in a real setting where students have to integrate the theories of their textbooks with nursing practices. Most nursing students report that they find placement difficult and frustrating, while some still find it inspirational (Lai, 2006). The ways in which different learning environments influence nursing students' psychological changes is the theme of this doctoral thesis. More specifically, whether or not the first time placement alters students' achievement goals (Elliot & McGregor, 2001a) and nurses' self-concept (Cowin, 2001) is the main focus of this study.

1.2. Focus of the study

From the perspective of achievement goals theory, the researcher of this study aims to investigate whether students' definition of success alters after their nursing placement. Answering this question will help to identify the types of challenges student nurses face during placement so that the assistance students receive can be more specific. The ways in which learning environment influences achievement goals has been well-documented (Ames, 1992). For example, students switch from a more positive attitude to an avoidance strategy in the

classroom during periods of high anxiety. Furthermore, when performance and normative criteria are emphasised in the learning environment, students tend to care about their grades and outperforming their peers more than mastering skills and understanding the materials. As for nurses' self-concept, this study provides an insight into the type of professional competence (e.g. care, communication, knowledge) that influences students during their first time placement. Such findings also help to outline the difficulties or benefits that nursing students receive in the workplace. Nursing researchers often discuss whether placements either help or undermine professional self-concept. The majority of the nurses' self-concept experiments reveal that placements undermine students' confidence in terms of professional competence (Arthur et al., 1999; Randle, 2001). The effect of low self-concept on nursing students has been identified as directly associated with low job satisfaction and low retention rates because positive nurses' self-concept works as a buffer that enables nurses to tackle the stress and challenges of the workplace (Cowin & Hengstberger-Sims, 2006). In addition, this thesis also examines the extent to which students' achievement goals; the mastery goal in particular, predicts their interpersonal relations with staff. Through the connection between nursing students' mastery goal and their staff relations, students' reasons for establishing staff relations and how the learning environment affects the mastery goal's prediction of interpersonal relations can be explored. Some empirical studies have proved that the higher one's mastery

goal is the better collegial relationships one would have in the workplace (Janssen & Van Yperen, 2004; Poortvliet & Darnon, 2010). This is because individuals with the mastery goal see colleagues' advice as a learning resource; however, the studies that came up with this conclusion were participated by full-time employees and it needs further research on whether or not such a conclusion can be made when research participants are learning as trainees. In this doctoral thesis, the investigation into trainees will explore other possible reasons for their development of staff relations and emphasizes the importance of interpersonal relations for students. The outcome of this investigation may identify whether students prioritize learning or developing staff relations in the first time placements.

1.3. Research questions

The main research questions in this study are as follows:

- How does the first time clinical placement affect Taiwanese nursing students' achievement goals?
- How does the first time clinical placement affect Taiwanese nursing students' nurses' self-concept?
- Does students' mastery approach goal predict their self-concept of staff relations?

1.4. The study

This quantitative study utilizes a group comparison, 2x3 factorial design to capture the essential differences between the experimental group and the control group by giving a questionnaire during the pre-test (T1), post-test (T2) and follow-up test (T3). The control group did not receive any intervention but the experimental group students went to a clinical placement before the post-test (T2) questionnaire. The total research period was 7 months.

1.5. Organisation of the thesis

In Chapter 2, the Literature Review, three theories that have been applied in this study are introduced: achievement goal theory; nurses' self-concept; and community of practice. The first two theories help to examine students' psychological changes, while the community of practice outlines the distinctive features of learning in a clinical setting.

The elaboration of the achievement goal theory begins with McClelland, Nicholls, and Dweck, followed by the findings of early achievement goal research. The following section in Chapter 2 then focuses on the two by two framework of achievement goal

theory devised by Elliot (1994), which is used as the main framework for the achievement goals study in this research. The empirical evidence that entails both goal change and stability is presented, followed by the possible factors of goal change in a clinical learning context.

The review of nurses' self-concept literature begins with the importance of self-concept and its influence on teenagers. Both historical and contemporary studies of self-concept are introduced. Shavelson and colleagues' multidimensional self-concept model is highlighted because the second research question is established upon Cowin's Nurses' Self-Concept framework (2001) which incorporates Shavelson and colleagues' work (1976). Since this research was conducted in a placement setting, the impact of placement on students' self-concept and students' tense relations with staff that undermines their confidence was specifically outlined, as some students' negative placement experiences emerge from their difficult staff relations.

The third part of the literature review details Wenger's community of practice theory, a concept driven by the belief that humans learn through social interaction (Wenger, 2011), followed by the features of learning outside the classroom. Hager's paradigm of

classroom learning and outside classroom learning is distinguished (1998). Tynjälä's work (2008) then explains what students learn in the workplace. In addition, the ways in which nursing is learnt through interaction with the community is described (Wotton & Gonda, 2004). Since students need to learn by interacting with staff, whether or not their achievement goal adoption affects their social behaviors is also of interest and the rationale behind the research of Poorvliet and Darnon (2010) and Janssen and Van Yperen (2004).

Chapter 3, Methodology, gives information on participants' background, data collection procedures, decisions for the statistical calculation, and the strategies for tackling missing data. The data was collected from the Achievement Goal Questionnaire (AGQ) and Nurses' Self-Concept Questionnaire (NSCQ). The participants of this research, aged 16 – 17, were recruited from two nursing junior colleges in Taiwan. They were divided into the control and experimental groups and given the questionnaires in three different time frames (T1, T2, and T3). While the experimental goal group went to a four week placement during T2, the control group stayed on campus and had lecture-based classes. In this longitudinal research, by comparing the experimental group with the control group, the purpose of data collection

is to see whether the experimental group shows a significant difference in their achievement goal and nurses' self-concept before and after their placement; and to identify whether differences exist and what these differences may be. As for statistical calculation, the research questions one and two examine the difference between the groups within the three time frames; for this reason, repeated measures of Manova were applied. Research question three aims to explore how the mastery goal predicts staff relations' self-concept; as a result, correlation and simple regression were calculated. Due to the 30% of missing data, in order not to generate a biased conclusion, a data imputation named Estimated Maximization is applied for the estimation of missing data. Statistical analysis and the findings from the questionnaires are reported in Chapter 4.

In Chapter 5, the final chapter, the findings of this thesis are discussed. Based on the theory of achievement goals and nurses' self-concept, more elaboration is given to explain the possible reasons for these findings. The implications and limitations of this study and further future directions of the research are outlined at the end of this final chapter.

Chapter 2 Literature Review

2.1. Introduction

2.1.1 Purposes of investigating achievement goals and nurses' professional concept

It has been suggested that students' performance is affected by both self-concepts and goals because, when in an achievement-related situation, students think about the task itself and the person doing the task (the self) (Barker, Dowson, & McInerney, 2004). The aim of the current thesis is to discover how nursing placements change students' self-perception. It is therefore reasonable to consider how placements influence both nurses' achievement goals and their self-concept because this will facilitate our understanding of how a clinical learning setting changes students' perception of the task (this will be examined through achievement goals) and students' perception of themselves (this will be examined through nurses' self-concept). The following introduction begins with a discussion of whether goals are a personality trait and therefore difficult to alter; this remains an on-going debate within the research community and therefore requires attention. After this, the ways in which placement learning can influence achievement goals and self-concept will be addressed.

In order to understand our minds, researchers have always been looking for a systematic explanation of human motives as a possible prediction of human behaviour in achievement

contexts, such as classrooms, workplaces, and sport fields. This intention drives researchers to investigate the psychological constructs that result in our understanding of where humans' optimal behaviours come from and how to motivate individuals to perform better in competence situations. One of the keys to understanding human behaviour and motivation in certain environments is to study an individual's achievement goals, which involves identifying a person's interpretation of competence in achievement settings. The study of achievement goal theory has been widely applied in different disciplines, such as educational psychology, developmental psychology, industrial-organizational psychology, sport psychology, and social-personality psychology (Elliot & Dweck, 2013). In this thesis, the achievement goal theory will be expanded to nursing education with the aim of investigating how learning environments affect the stability of achievement goals.

2.1.2 Are goals dispositional, contextual, or both? Examined through placements

Given the fact that achievement goals greatly influence our lives, it is because the achievement goal theory 'traces people's behaviours, thoughts and emotions in achievement situation (Senko, Hulleman, & Harackiewicz, 2011, p. 72). It is therefore natural that researchers are interested in how goals are adopted, maintained, or changed.

For example, researchers are able to evaluate that the extent to which teachers' feedback would affect students' evaluations of themselves and students' goal adoptions, which would raise educators' attention to feedback giving (Senko & Harackiewicz, 2005).

One of the aims of this thesis is to examine both the changes and stability of the mastery goals after nursing placements. Specifically, this question will be posed: when students are in their first time placement, would most of their goals change or remain the same after the placement? And if students are in a learning environment in which their performance is particularly emphasized, do their goals change in the pursuit of performance?

Some theorists claim goals are as stable as personality traits (Elliot & Harackiewicz, 1996; Kunda, 1990; Nicholls, 1984), so for these researchers, achievement goals are dispositional while others argue goals are seen as situational because goals can change depending on environments or feedback received (Ames, 1992). In more recent literature, achievement goals have been portrayed as both dispositional and situational (Fryer & Elliot, 2007). On the one hand, the adoption of achievement goals can be seen as a personal characteristic because individuals have been observed to obtain similar types of goals when faced with different situations. Alternatively, it is also common to

see people adjust goals to suit a specific situation for better results and performance.

For example, a student might cheat in one class, but not in other classes (Dweck & Leggett, 1988).

There have been numerous empirical studies undertaken on achievement goals focusing on learning in classrooms (Bong, 2005; Elliot, Murayama, & Pekrun, 2011; Kaplan & Maehr, 1999) and some on employees in offices (Janssen & Van Yperen, 2004) but investigation into learning outside of classrooms is very limited. For instance, there is a lack of clarity surrounding apprentices' and trainees' achievement goals as they have been in both classrooms and the workplace. Since this gap has been identified, the aim of this thesis is to closely investigate how workplaces influence students' achievement goals. The researcher of this thesis is interested in how much impact do a real working environments has on the stability and change of goals? Therefore this study focuses on nursing students' achievement goals in the workplace and in classroom contexts. Clinical environments provide an essential learning process that involves a very different surrounding from the classroom, such as the ethos of wards, equipment, relations with staff, patients, clinical teachers (instructors). The literature has identified that the factors above make placement an initial and crucial step for the development

of professional skills and students' confidence in the rest of the nursing curricula. It has been noted that nurses must graduate with self-confidence and self-esteem which would enable them to perform at the standard expected (Ellis, 1980).

As aforementioned, it has been suggested that goals and self-concept are related and that both influence students' performance and achievement (Barker et al., 2004) because, in fact, one key concept in goal theory is to emphasize how influential one's perception of task purposes and structures is in relation to his or her performance outcomes (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Kaplan & Maehr, 1999). Alternatively, self-concept theory also illustrates that one's perception of one's ability affects achievement (Marsh & Craven, 1997). Based on these statements, it is not difficult to state that both "goal theory and self-concept theory see perceptions of task and self as fundamental psychological drivers of performance and achievement arising from engagement in those tasks" (Barker et al., 2004, p. 8).

2.1.3 Do placements influence psychological processes? Examined through achievement goals and through nurses' self-concept

The features of learning in classrooms and in the workplace are distinctly different. For trainees, placement experiences often involve mixed feelings. There is excitement, determination, anxiety, and frustration; all because placements occur in a real-life setting which makes the process of learning and evaluation more complicated and difficult. In order to survive in such a challenging environment, this thesis predicts that students' achievement goals change over time, meaning students may change their motives for nursing profession after their experiences in a real clinical setting. For example, they might have the determination to master their medical knowledge before the placement, but after realizing it is not as easy as they think when in a workplace, they may turn to aim for not making mistakes. Achievement goals are also personal qualities, however, which individuals adopt to handle daily life events. Is the pressure to survive during placements strong enough to alter nursing students' way of thinking? If the change does happen, is it permanent or temporary? These key questions will be addressed over the course of the thesis.

Placement experience may change not only students' goals for learning but also how they see themselves in terms of professional competence. Since placements offer students the learning tasks that classrooms cannot provide, students' self-perception of being successful in the tasks will differ from that of in the classroom. Nurses' low professional self-concept has been identified as an important attribution of their poor job stratification and stress which later lead to low retention rates and difficult recruitment (Arthur & Randle, 2007). Early nursing experience has been proved influential to nurses' self-concept (Lai et al., 2008); however, most empirical studies focusing on nurses' self-concept consider new nurses and students in their final years (Arthur, Sohng, Noh, & Kim, 1998; Cowin & Hengstberger-Sims, 2006; Hensel, 2008; Kelly & Courts, 2007). This implies that the early monitoring of students' nurses' self-concept has been overlooked. It is worth monitoring nurses' self-concept as early as possible because self-concept has been defined as a developmental process that requires long-term interaction between the individual and his/her external world (Marsh & O'Mara, 2008; Shavelson et al., 1976).

2.2. The achievement goal theory

2.2.1. Early research on motivation

The Achievement Motive has been described as one of the most important set of studies that contributed to the development of contemporary achievement goal theories by (McClelland, Atkinson, Clark, & Lowell, 1953). Before *The Achievement Motive*, the concepts of achievement goals were ambiguous. The results of empirical works failed to validate theories and were unable to provide systematic and clear justifications or integrate with other relatively similar constructs such as creativity, cognitive strategies, and self-regulated learning (Elliot & Dweck, 2005). This pioneering study on humans' need for achievement was used to outline the central concept of contemporary achievement motivation research, despite its importance, its definition and references may not be as clear or robust in comparison to the standard of research nowadays.

For the investigation of motivational dispositions, McClelland and colleagues (1953) applied the Thematic Apperception Test (Morgan & Murray, 1935) to analyse the responses to pictures that illustrated stories. The researchers created a scenario that emphasised achievement motivation for the participants in the experimental group. The participants were told that they would undertake an intelligence test and the result would be used to decide if they could become a government or military leader.

For the control group, the researcher did not emphasize achievement motivation in the scenario. After being allocated different settings, all the participants were asked to write stories based on the pictures they saw. During the experiment, researchers observed participants' response to different scenarios. The researcher found differences in the responses from the two groups and claimed those differences were the signs of achievement motivation (Elliot, Elliot, & Dweck, 2005).

By proposing the Need for Achievement, Atkinson (1957) expanded McClelland and colleagues' work and developed a theoretical model to illustrate the fundamentals of human motivation that include motive, expectancy, and incentive. *Motive* is seen as a characteristic that pushes people to seek achievement as satisfaction. Atkinson explained that such satisfaction may come from the pride of accomplishment, the sense of belonging, or the feeling of being in control or being influential to others. *Expectancy* refers to the anticipation experienced after undertaking actions. The influence of expectancy is evident as people's performance, persistence, and choices are determined by how confident they are about completing tasks and how they value these tasks (Wigfield & Eccles, 2000). *Incentive* is defined as attractiveness, something we covet or crave, such as food, or as unattractiveness, something we want to avoid, like punishment. Incentive is sometimes overlooked, however, because it shares similarities

with expectancy, as Atkinson (1957) explained in the study. A formula illustrates how humans obtain motivation: $\text{Motivation} = \text{Motive} \times \text{Expectancy} \times \text{Incentive}$ (Atkinson, 1957). Some studies based on this formula found that individuals with a higher motive are likely to choose the tasks with intermediate difficulty. Given their high value of sense of achievement, choosing the hardest task resulted in a small chance to success and completing the easiest task did not provide the necessary sense of achievement. On the other hand, the researchers in this study observed those individuals with a low need of achievement chose either extremely easy or difficult tasks because they did not primarily seek the satisfaction of achievement. Alternatively, it was also reported that for those who chose the most difficult tasks, some of them did not see their failure as a sign of incompetence (Atkinson & Feather, 1966 cited in Remedios, 2008).

2.2.2. John Nicholls

Nicholls (1976) proposed one of the most influential conceptual frameworks of achievement goals, by suggesting that the impact of perception of ability on people's performance in achievement settings is highly significant. From the perspective of children's mental development, Nicholl observed that young children are unable to distinguish between ability and effort, meaning that young children believe more effort

equates to better ability. By the age of twelve, children are able to conceptualize what ability is and delineate between efforts and ability. Thus, a twelve-year-old child may think that being smart means he could outperform others by devoting himself as much as or less than other children (Nicholls, 1976).

Following on from the observation of children's development within the concept of ability and effort, Nicholls (1983) noticed that theorists at the time did not consider the possibility that ability might need to be constructed in a different way. He explained that an individual's perception of their ability should be the underlying basis of an achievement motivation study because there is a significant difference between someone who sees ability as genetic and natural and someone who believes ability can be developed (Nicholls, 1984). More specifically, Nicholls explained that a person's motivation behind their achievement behaviours is based on either developing or demonstrating ability.

Nicholls then proposed a dichotomous model that entailed task involvement and ego involvement based on the necessity of the differentiation between abilities. Task involvement looks for self-referential success that drives an individual to develop and improve skills by learning and mastering tasks. Such motivational behaviour is also

labelled as a *task* or *mastery* goal (Pintrich, 2000). People with this type of purpose see ability in an undifferentiated fashion, meaning they see high ability in more effort. By contrast, ego involvement refers to the notion that high ability relates to putting in less or equal effort in comparison to others. Ego involvement differentiates ability and effort and is also known as a *performance goal* (Pintrich, 2000).

Nicholls' dichotomous framework has been empirically examined and yields the conclusion that task involvement has a positive relationship with intrinsic motivation and positive effects as well as adaptive behaviours; on the other hand, ego involvement has been closely associated with self-conscious evaluation and often results in negative effects and less adaptive behaviours (Biddle, Wang, Kavussanu, & Spray, 2003; Fox, Goudas, Biddle, Duda, & Armstrong, 1994; Ntoumanis, Biddle, & Haddock, 1999). The literature suggested that achievement motivation may also be influenced by other factors and lead to various outcomes, although seeing ability and effort in a non-differential or differential fashion is one way of distinguishing one achievement motivation from another. For example, it was found that ego involvement is not always negative; in fact, it may cause adaptive behaviour in achievement settings as long as it is combined with other aspects of self-perception, such as confidence (Nicholls, 1989).

The differences between Atkinson's and Nicholls' views on motivation have been identified. According to Elliot and Dweck (2005), both theorists state that all humans have a desire to achieve tasks for their own reasons, but that subtle discrepancies make one person different from the other. Atkinson's principle of motivation is determined by the individual; for example, their motive (one's need for achievement), expectancy (the possibility to succeed), and incentive (the reward that one attempt or punishment that one to avoid). Alternatively, Nicholls emphasized that achievement motivation is determined by how people see their own ability, particularly in comparison to others. In other words, Nicholls conceptualized achievement goals based not only on the self, but also on other people.

2.2.3. Carol Dweck

While Nicholls and his colleagues were proposing their framework of achievement goals, Dweck and other scholars were also conducting a series of experiments to explain achievement goal adoption from the perspective of the attribution of failure. They found that school children who had similar competency levels showed different reactions to failure in achievement tasks (Diener & Dweck, 1980; Dweck, 1975; Dweck & Reppucci, 1973). Dweck explained because, when facing failure, some children

attributed it to a lack of effort while others saw failure as a consequence of their incompetence. By identifying different attributions, Nicholls' research also demonstrated that children who believe it is their lack of effort that leads to failure are more likely to have adaptive learning behaviours. Their "mastery" response is followed by positive expectancies, persistence, and challenge-seeking tendencies. By contrast, those who believe their low ability by nature causes the failure often show maladaptive behaviours such as helplessness, negative expectancies, a poor level of persistence, and the avoidance of challenges (Elliot & Dweck, 2005).

Dweck and Leggett (1988) defined achievement goals as the purpose of an individual's task participation in achievement settings. Based on this definition, two types of goal theories were introduced: *Entity Theory* and *Incremental Theory*. Entity theory refers to the belief that one's ability is fixed, which a person judges by their own ability and evaluation from others. Alternatively, incremental theory indicates that intelligence is malleable, which drives people willing to master skills in order to improve themselves (Dweck & Leggett, 1988). Like Nicholls' task and ego involvement, Dweck's theory was also developed into a dichotomous framework that is deemed a fundamental concept of today's achievement goal theory. This dichotomous construct includes (1) the performance goal, which has the purpose of competence demonstration (or the

avoidance of showing incompetence); and (2) the learning goal, which aims at skills development and mastery (Elliot & Dweck, 2005). It was pointed out by Dweck that it is important to integrate achievement goals with other variables, such as level of confidence, similar to what Nicholls suggested.

Some of the similarities between Nicholls' and Dweck's views on achievement motivation have been considered vital and worth discussing. Elliot and Dweck (2005) provided a clear comparison regarding their contribution. (1) The definition of "purpose": There are two primary ways to define the word purpose: as 'the reason for which something is done, made, used' and 'an intended or desired result, end, aim, goal' (*Random House Dictionary of the English Language, 1993*). Nicholls and Dweck applied both definitions in order to identify the reason for certain behaviour in an achievement situation (e.g. the development or demonstration of ability) or to note 'the aim or outcome that people see in achievement settings' (e.g. an individual pursuit normative or self-referential ability) (Elliot et al., 2005, p. 55). (2) Integration with other constructs: Ability is an important component of achievement goal theory, but it is also tied with other concepts. For example, performance goal or ego involvement also implies one's need for approval and self-presentation. (3) The effects of achievement goals: Nicholls and Dweck both concluded similar outcomes of achievement goals.

Mastery goal, emphasizing the development of ability and task mastery, is often adopted in relation to positive learning outcomes. Performance goal, aiming for a demonstration of performance and seeking normative competence, is likely to cause negative behaviours. In addition, they both agreed that the performance goal is easily influenced by the level of confidence. If the performance goal is accompanied by low self-confidence, then the most negative behaviours occur, but positive impact would emerge if accompanied by higher confidence. (4) Both theorists claimed the performance/ego goal and learning/task goal are two separate and opposite constructs. Yet, Elliot and Dweck (2005) criticized their early work that Nicholls and Dweck's discretion excluded a unidimensional concept of achievement goals, meaning that they conceptualized the two types of goals with essential differences without considering that the two goals may share some of the original concepts. For example, both the mastery and performance goal have positive influence to learners (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997 cited in Barron and Harackiewicz, 2001; Harackiewicz & Elliot, 1993). Therefore, the dichotomous way to separate the mastery and performance goal was found confusing and needed to be extended (Elliot & Harackiewicz, 1996; Urdan, 2000). (5) Achievement goals have been considered both situational and dispositional despite both theorists admitting that the dispositional

feature of goals had brought limitations to the research (Dweck & Leggett, 1988). Generally speaking, they seemed to emphasise different features in their early research. Dweck often focused on the situational feature of goals (Elliott & Dweck, 1988) while Nicholls' studies mostly examined dispositional goal orientation (Nicholls, Cheung, Lauer, & Patashnick, 1989).

2.2.4. Early research findings of achievement goals

In the mid to late 1980s, many researchers were interested in Nicholls and Dweck's theories of achievement goals and conducted a series of empirical studies. An integrative view was proposed by joining the existing frameworks with other constructs (Ames & Archer, 1987, 1988). The researchers found that combining various beliefs and different goals leads to different consequences. It was necessary to expand the achievement goal theory into a wider range of concepts and to characterise it as "networks or patterns of beliefs and feelings about success, effort, ability, errors, feedback, and standards of evaluation" (Elliot & Dweck, 2005, p. 57). That is to say, researchers should not limit their focus on achievement goals' impact on performance and students' self-perception. Instead, the literature of achievement goals theory should

integrate with other issues; for example, researchers should consider how students' self-concept affects their interpretation of teachers' feedback and their own errors and then later influences their goal adoption. This broader notion of achievement motivation was labelled as "orientation" (Elliot & Dweck, 2005, p. 57).

Based on their integrative view of achievement goals, Ames and Archer (1988) began to apply their ideas to classroom settings with group and individual levels of analysis. They observed how an emphasis of mastery or performance goals in the classroom influenced students' choice of learning strategy and task, as well as their attitude towards and reason for failure. By this time, researchers started to reconsider whether mastery and performance goals can be adopted at the same time or they should continue to claim that goal adoption is one or the other (e.g. people only adopt either mastery or performance goal). This is because studies discovered that different levels of combinations of mastery and performance goals had varying influences on behaviours and performance in classrooms (Ames & Archer, 1988) and the field of sport (Duda, 1988). By the early to mid-1990s, most scholars agreed that the mastery goal leads to positive outcomes and adaptive behaviours, while the performance goal is linked with negative consequences. Nevertheless, such a conclusion was based on the researchers' sole focus on the main effects of achievement goals, rather than a consideration of the

influence of how individuals see their own ability (Elliot et al., 2005). Several studies included perceived competence as a moderator of achievement goals and the outcomes and found mixed results (Smiley & Dweck, 1994), especially in the performance goal. That is to say how confident an individual feels about their ability determines whether their performance goal leads to either adaptive behaviours or maladaptive behaviours. The details of this will be elaborated in the following paragraph.

The empirical studies showed that the performance goal sometimes leads to positive outcomes (Midgley, Anderman, & Hicks, 1995 cited in Middleton and Midgley, 1997; Midgley & Urdan, 1995) and sometimes causes negative outcomes; Anderman and Young (1994) reported that, at other times, no relation can be found between the performance goal and its outcomes and adaptive help-seeking behaviours (Ryan, 1997). Given these inconsistent results of the performance goal, the previous studies on the effects of the performance goal were questioned because the performance goal seems to facilitate learning in one achievement setting but not in others (Koestner, Zuckerman, & Koestner, 1987; Miller & Hom, 1990). Some studies also suggested personality traits as an important factor that impacts achievement goals (Harackiewicz & Elliot, 1993; Harackiewicz & Sansone, 1991).

2.2.5. A new wave of achievement goals and the emergence of the approach-avoidance distinction

As mentioned earlier, the performance goal empirically showed inconsistent findings (e.g. sometimes it is associated with positive outcomes and sometimes negative) and the theorists struggled to justify these results within the existing dichotomous framework. In order to examine the performance goal in depth, the subdivision of goal structures was found to be urgent. Elliot (1994) advocated the need for an approach-avoidance distinction which had originally been proposed and discussed together with the first formal model of achievement motivation by Lewin, Dembo, Festinger, and Sears (1944), but this distinction had been previously overlooked. According to Elliot (1994), the approach distinction focuses on the “potential positive outcomes”, while avoidance distinction’s attention is on the “potential negative outcomes”. This subdivision later led to the trichotomous achievement goal construct by Elliot (1994), which includes the mastery goal, performance approach goal, and performance avoidance goal. The study by Rawsthorne and Elliot (1999), however, showed that the approach-avoidance distinction can be manipulated. If the potential positive outcome has been emphasized (e.g. those who achieve the normative criteria would be rewarded), participants are likely to adopt the performance approach goal and show

positive consequences and adaptive behaviours. Conversely, if the potential negative outcome has been highlighted (e.g. failure to achieve would lead to embarrassment or punishment), participants tend to obtain the performance avoidance goal and show negative behaviours.

2.2.5.1. Definition and valence

Elliot (1994) suggested that the achievement goal theory is conceptualized on the basis of competence. Through different ways of constructing and reasoning one's own competence, different structures of goals can be predicted. Achievement goals have been delineated into two separate categories: the definition and the valence of goals (Elliot, 1999; Elliot & McGregor, 2001b). In Elliot's trichotomous framework, the standard that is used to evaluate confidence constitutes the definition of achievement goals. There are three standards used to define competence: an absolute standard (the requirement of the task itself); an intrapersonal standard (one's performance in the past or the attainment of the best performance); and normative standard (the performance of others). That is to say one's definition of competence depends on what one's standard is and to whom they compares themselves. For example, one might see themselves

competent as long as they have the necessary skills to complete tasks; or they feels competent only when they compare to themselves and sees improvement; or the feeling of competence occurs through outperforming others. Absolute and intrapersonal standards share some similarities; for some researchers, these two standards are essentially close to each other. Some theorists therefore define competence in absolute-intrapersonal terms or in interpersonal terms (Ames, 1984; Maehr, 1983). In addition, competence can also be conceptualized by valence which includes positive terms (positive outcomes: competence or success) or in negative terms (negative outcomes: incompetence or failure). Two types of valence refer to different focuses in the achievement setting. Some people aim for potential positive consequences and others focus on the avoidance of potential negative consequences (Elliot & McGregor, 2001a).

2.2.5.2. The emergence of the mastery avoidance goal

Despite mastery goal showing consistent results that mostly indicate its positive influence on human behaviours, Elliot (1999) pointed out that such straightforward findings might be due to research manipulation and measurement that all focus on positive outcomes. In other words, the positive results may only be because the researchers simply ignored the possibility that the mastery goal could bring potential

negative outcomes (Elliot et al., 2005). As with the distinction that appears in the performance goal, Elliot subdivided mastery into an approach-avoidance distinction and integrated it with the trichotomous structure then proposed a 2 x 2 achievement goal framework by Elliot & McGregor (2001)(see figure 2.1) in which the **mastery avoidance goal** is considered to be an independent concept to the mastery approach goal. When the mastery approach goal focuses on self-reference competence, the mastery avoidance goal directs people towards avoiding self-reference incompetence. For example, people with a mastery approach goal strive to improve their skills and their comprehension of the materials so they can surpass themselves; on the other hand, people with a mastery avoidance goal try to avoid lapsing by focusing on retaining their skills and maintaining the understanding of the materials that they have already learnt.

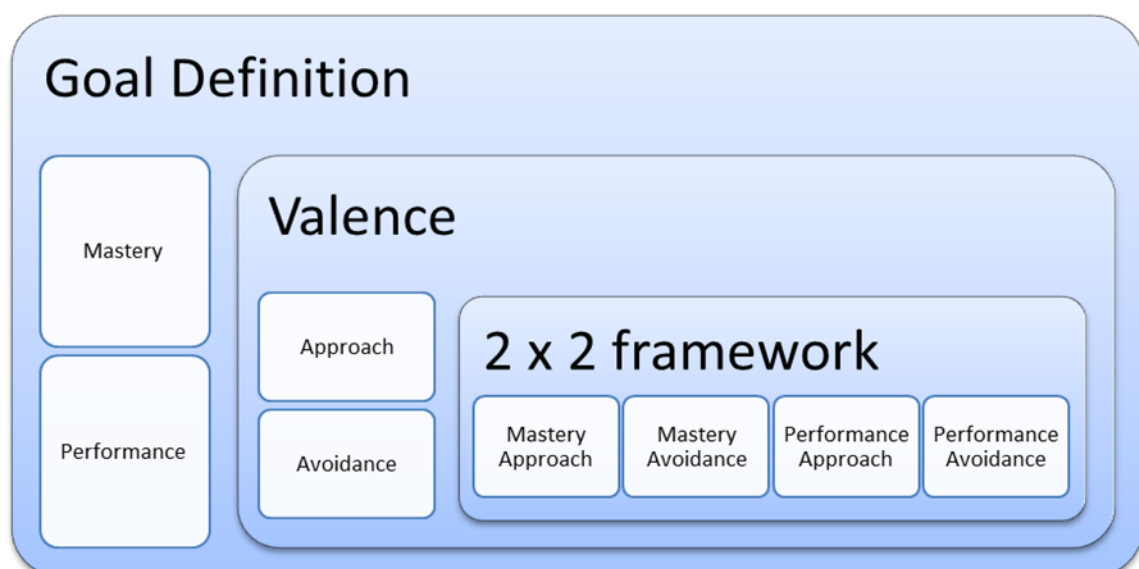


Figure 2.1 2 x 2 achievement goals framework (Elliot & McGregor, 2001)

Since the mastery avoidance goal is a relatively new concept, in comparison to the three other goals, our understanding of mastery avoidance and its influence is rather limited. Generally speaking, the mastery avoidance goal is still self-referential, but it aims for less competent outcomes than the mastery approach goal. It is, however, slightly more optimal than the performance avoidance goal (Elliot, 1999; Elliot & McGregor, 2001b). It is a low perception of competence that leads to the adoption of the mastery avoidance goal because the individuals with this goal sense that, due to their incompetence, they would not be able to surpass themselves or improve their skills. Despite the fact that there are fewer empirical studies on the mastery avoidance goal than on other constructs, researchers in fact found that the mastery avoidance goal is most common among certain types of individuals. For example, it can be seen among the elderly. Their gradual deterioration of physical function and mental ability make them focus on not losing what is left. In addition, some individuals, like athletes who feel they have already reached their full potential, may move from a 'surpass self' to a 'not to elapse and maintain what I am capable of' position. Researchers also observed that certain personalities such as perfectionists are more likely to adopt the mastery avoidance goal because of their need to avoid making any mistakes or not to lose a single point (Elliot & Dweck, 2005). The empirical evidence confirmed the necessity of the mastery

avoidance goal as in the examples above; because some people do focus on negative outcomes while obtaining a mastery goal. By adding the mastery avoidance goal, more insights into the mastery goal have been explored and the potential negative influences from mastery avoidance have caught researchers' attention.

2.2.6. Goal change and stability

This section will provide relevant literature on whether or not goals are stable as personal traits or somewhat malleable due to external influences. If goals can be changed, what are the factors that facilitate goal change and what types of change can be seen? Despite gaining plenty of attention from scholars, the answers to such questions regarding goal stability and change still remain inconsistent. Many researchers have demonstrated convincing results showing that goals can be changed after tasks or manipulation (e.g. the different emphasis in classrooms and feedback from teachers) (Ames, 1992; Dweck, 1986); however, other researchers have been testing goal stability and found that achievement goals adoption is a directional and biased process (Kunda, 1990), which implies achievement goals are unlikely to change in a short time (e.g. an academic term) (Middleton, Kaplan, & Midgley, 2004). In a recent study, some researchers also claim goals consist of both stability and change (Fryer &

Elliot, 2007; Muis & Edwards, 2009). The following paragraph will explain achievement goal adoption in its directional and biased process.

2.2.6.1. Goal stability

Although the literature continues to present mixed findings, especially between the performance approach and performance avoidance goal, there are robust reasons for justifying goal stability. One is to consider the hierarchical nature of achievement motivation (Elliot & Church, 1997) because personality traits and temperaments have been deemed influential to achievement goals adoption (Elliot & Church, 1997; Elliot & Thrash, 2002; Harackiewicz, Barron, & Elliot, 1998). The other reason lies in the nature of the goal construct (Fryer & Elliot, 2007). After adopting a certain goal, people would also build a relevant cognitive framework which they use to interpret the learning task, experience task engagement, and respond to the competence-relevant information. Most importantly, this framework mediates a cognitively ‘biased and directional’ process. That is to say, such a framework makes people build up a ‘self-fulfilling’ attitude on their achievement goals that they have already adopted (Elliot & Harackiewicz, 1996; Kunda, 1990). For example, after a period of time, the behaviour or ways of thinking based on this type of goal would be taken for granted or become a habit. Consequently, in a biased cognitive process, it is unlikely for a person to perceive

a different influence for a goal shift, even when there appears to be an influence. For instance, given the feature of the avoidance valence, meaning the focus on potential negative outcomes (worrying about losing existing ability and knowledge or avoiding embarrassment), an avoidance-based goal drives a person either to keep themselves away from those negative consequences or to fail to do so. None of this conveys a positive message to the individual encouraging them to shift from the avoidance to the approach attitude and to pursue possible positive outcomes.

In addition, the statistical evidence also confirmed goal stability by rejecting the possibility of *Goal Switching* (Senko et al., 2011). The researchers reported that goals are stable by examining test-retest correlations and mean levels of goal pursuits; the results revealed that, if goals change, the correlation between goals should be low, but many studies fail to demonstrate this. For example, the correlation between mastery goal and performance goal is often found to be positively related, especially during the academic year. This also indicates that goal change is rare, at least within the time frame of an academic year. Senko and colleagues' work (2011) argued that, if the switch does occur between the performance approach and performance avoidance goals, the decrease of one goal and the increase of the other should be easily observed; however,

only one out of ten studies reveals such a result (Senko et al., 2011). Despite there being evidence in favour of stability, a few studies still demonstrated significant goal switching between the mastery and performance goal, especially when students continuously experienced negative feedback and anxiety (Fryer & Elliot, 2007; Muis & Edwards, 2009).

2.2.6.2. Goal change and the types of change

Although there is strong evidence to support goal stability, ample empirical studies prove that achievement goals change when certain factors are involved. Goal theory has been developed on the basis of a social-cognitive perspective (Zimmerman, 2000) that suggests that humans reevaluate and reconstruct goals and behaviours when in a different context (Middleton et al., 2004). This perspective presents the ways in which we cognitively interpret situations and process information depending on our surroundings (Muis & Edwards, 2009). Similarly, other scholars see goal change as a form of self-regulation (Bandura, 1986) and believe that humans naturally adopt optimal self-regulation to decide what goal to use according to the situation while also monitoring their experience of events then reevaluating the necessity of goal revision (Wrosch, Scheier, Carver, & Schulz, 2003; Zimmerman, 1989). A few influences that

cause goal change have been outlined, such as the additional information of the task (e.g. difficulty level, interest level) and environment (harshness of evaluation, stiffness of competition) (Bong, 2005 cited in Fryer & Elliot, 2007, P.701). In addition, performance feedback (Senko & Harackiewicz, 2005) and life events are also considered strong factors that prompt goal change (Fryer & Elliot, 2007).

In terms of goal change, two types of patterns have been identified (Senko et al., 2011). One is *Goal Intensification*, which refers to a goal change that takes place within the same type of goal and fluctuates according to an individual's commitment to this goal. Students' perception of competence, such as feedback, can predict goal fluctuation. For example, if a student found it difficult to maintain the mastery approach goal, they could reduce their pursuit of this goal (Bong, 2005; Jagacinski, Kumar, Boe, Lam, & Miller, 2010). Another supportive study found that, when comparing students with low self-efficacy, those with high self-efficacy were more likely to fluctuate between the low avoidance and high avoidance of performance goals if the tasks became more difficult (Middleton et al., 2004). The possible explanation for this is that students with a high self-efficacy are not used to failure so they want to avoid embarrassment and any signs of incompetence; as a result, their performance avoidance goal increases (Middleton et

al., 2004). This argument describing how goals fluidly change is similar to the study by Fryer and Elliot (2007) in which they stated that the goal adoption process should not be described as a ‘none or all’ event, but as a continuous process with shifts in the degree of goal endorsement (p. 701).

2.2.7. Possible factors for goal change and an overview of clinical learning in Taiwan

Based on the factors listed above, the influences that cause goal revision will be introduced here in relation to clinical learning settings, namely fear of failure, pressure, and unrealistic expectation. First, according to the literature, *Fear of Failure* is often related to goal change (Conroy & Elliot, 2004; Elliot & Church, 1997). The theorists found that a student who had recently transitioned from primary school to secondary school was more likely to switch their mastery learning focus to ‘strive not to fail’ or ‘not to miss a learning chance’, which belongs to the avoidance distinction mastery learning. This is because the materials are more advanced and maintaining higher grades is more difficult. A goal change from the approach to avoidance distinction is particularly common among students who have high academic self-efficacy (Middleton et al., 2004). A similar cause of goal change may be expected in the current study, as a

clinical placement is a learning environment where students perceive great change in comparison to classrooms. After all, applying knowledge and skills in a real clinical setting is very different from lecture-based learning. Despite being under the supervision of teachers, students often find themselves struggling due to a lack of knowledge or experience and worrying about potential failure. As noted by Kleehammer, Hart, and Keck (1990), placements can be challenging and unpredictable, especially the first placement (see 2.4.2) .

Second, *Pressure* can also predict goal changes (Henderlong & Lepper, 2002; Ryan & Deci, 2000). Taking medical students as an example, medical students were observed to be more mastery oriented before the rotation started in hospitals; however, they became performance oriented after the training because they were more aware of the responsibility they had for their patients. The aim to ‘get it right’ therefore becomes more important than learning medicine for medical students, because the medical learning context has a low tolerance to errors (Wolf, Balson, Faucett, & Randall, 1989). In order to keep up with the rapid pace in hospitals and for patients’ safety, medical trainees do not always have time to learn from their mistakes. For example, if a medical student tries to take blood from a patient but fails, in order to protect the patients, the

supervisor may take over; as a result, it is not always the case that students are given a second chance to learn. That is to say, the trainees have the pressure not to make mistakes because of the pace of wards and the *do no harm* principle. In short, the nursing training objectives and the pressure from the workplace may be vital influences of goal change. Another study found that university students became more performance oriented while they advanced through the course due to the pressure of impending reality (e.g. finding a job, fulfilling important expectations from others) (Lieberman & Remedios, 2007).

Finally, goal change may also be caused by *Unrealistic Expectation* because it undermines students' learning interests (Lieberman & Remedios, 2007). It has been found that university students had a 'rosy' expectation when they first entered university so the students were highly interested in the subject and showed mastery orientation, but once they discovered that the course did not meet their expectations, they became less interested in the materials. This longitudinal study found students' learning interests dropped in the second year and remained low in subsequent years. It must be noted, however, that more empirical studies are needed for this finding to be verified (Lieberman & Remedios, 2007).

Relatively little empirical research has provided evidence and discussion on how goals may change in a clinical learning setting. Some studies have identified the antecedents for goal changes in such a learning environment, especially in a Problem-Based Learning (PBL) context in which students are more likely to experience a fear of failure. The evaluative feedback received during placements also plays an important role in goal change. The following sections will specify the factors in clinical learning settings that may lead to goal change, such as Problem-Based Learning, feedback, and vague fantasies and these factors can found during placements and lead to anxiety, pressure, and unrealistic expectations, which later cause goal change, too.

It has been suggested that Problem-Based Learning (PBL) is an effective teaching and learning approach that prompts learner autonomy as well as metacognitive processes, so it is frequently applied in today's clinical training. During clinical placements, according to a social-cognitive perspective (Zimmerman, 2000), it can be expected that students adjust their goals and learning styles according to this new environment. In comparison to their lecture-based learning, it was found that a PBL learning environment engages students with mastery orientation and independent learning styles (White, 2007). The participants were found to be more self-regulating by shifting from

passive learning to active learning; for example, 'I really started to learn because I wanted to learn, not because I was studying for a test' (White, 2007, p. 288). Similar studies that considered medical students' early patient contact experience also reported that students started to reflect on their own learning experiences during the training which later influenced their goals and commitment to the profession (Niemi, 1997). Although PBL may be likely to inspire learning interests and passion then facilitate the endorsement of the mastery goal, as aforementioned, the pressure from real workplaces can also deter students from using the mastery goal due to their increasing responsibility for patients' safety which compromises their learning and interests (Kraiger, Ford, & Salas, 1993; Wolf et al., 1989). At the same time, however, it has been identified that students in their first placement are always concerned about 'failure', particularly in terms of the fear of looking stupid, making mistakes, and causing harm to patients (Killam & Heerschap, 2013; Levett-Jones, Pitt, Courtney-Pratt, Harbrow, & Rossiter, 2015), as well as a lack of clarity about placement expectation and misconceptions about their role and responsibilities (Andrew, McGuinness, Reid, & Corcoran, 2009).

In addition, when students are new to clinical work, instructors' feedback becomes one of the most important sources for self-evaluation; feedback therefore plays a

significant role in goal change (Senko & Harackiewicz, 2005). When students received consistently negative feedback, they were observed switching their performance approach or mastery goal to an avoidance-based goal (Elliot & Church, 1997) because they felt their efforts were not being recognised (Ames, 1992). Clinical teachers' competence in giving feedback, however, needs to be improved. Several studies reported that some students had an unpleasant experience because the instructors were unable to give constructive, self-reflective feedback (Hsu, 2007; Jonsén, Melender, & Hilli, 2013; Löfmark & Wikblad, 2001). A lack of constructive feedback directly influences goal adoption, as Ames (1992) explained that the mastery goal would be difficult to develop with feedback that prevents students to self-reflect and understand the task relevance. Feedback should be given with caution because everyone holds different attitudes to their success and failure; they therefore respond to feedback differently as Goal Theory suggests. It was noted that instructors and students should bear in mind that feedback represents formative information rather than judgment; however, feedback is sometimes misinterpreted. For example, without clarification, students might see received feedback as a source of self-concept. That is to say, if feedback contains an instructor's disappointment or a personal judgment, students might

adjust their goal approach in order to avoid future embarrassment. It has been suggested, however, that not all feedback leads to a negative influence (such as anxiety and frustration). It might also facilitate goal adjustment in order to meet current situations, thereby leading to students' improvement (Senko & Harackiewicz, 2005).

The last influence can be observed among nursing students is the 'vague fantasy', which can be the function of goal change during placements. It was outlined that, at the end of the first training session, some medical students had a 'fantasy' about the medical profession, especially for those who had more positive placement experiences (Niemi, 1997, p. 412). Students illustrated how they became interested in a particular specialty, but these ideas still seemed tentative. In the same study Niemi explained the same effect can be observed in the nursing placements, too; nursing students would become more positive about their professional competence if they had a favourable experience. Nevertheless, vague fantasies can be a negative influence. For instance, before the placement begins, students learn from the textbook and the experience shared by their teachers in lectures. Those standardized processes and personal experiences, especially the positive ones, can probably lead to an illusion as explained by Lieberman and

Remedios (2007); students' notions of what nursing is like can be skewed by these processes. Once students found that real workplaces did not match their expectations, the reality check can directly undermine their learning interests and self-perceived competence followed by goal change.

2.2.8. The implications of achievement goals for nursing students

Understanding goals makes it possible to anticipate important issues like a person's attitude towards difficult tasks, their perception of competence, and learning strategies.

Achievement goals reflect how the desire is attained or the competence is demonstrated in an activity; these goals also influence how students approach and experience their coursework (Dweck, 1986; Spence & Helmreich, 1983). It is therefore important to find out whether or not goals are altered by clinical placements. If the current study could identify the influence of placements on the achievement goal, future research should pay more attention to the factors that cause goals to change so that cognitive and emotional assistance can be provided to minimize goals altering towards the avoidance distinction. On the other hand, if the results of this study suggest goals remain stable after placements, the direction of future research lies in how to remedy those negative consequences from maladaptive goal adoption, such as worrying about embarrassment.

Moreover, previous studies suggested nursing placements jeopardize students' self-concept (Randle, 2001). The literature also revealed the fundamental interrelation between self-concept and achievement goals and explained how humans are driven by these two elements (Barker et al., 2004). Our purpose in a task (achievement goal) and our perception of ability (self-concept) are interconnected in a learning situation, which indicates that achievement goals and self-concept influence each other (Niepel, Brunner, & Preckel, 2014). It is thus reasonable to investigate nursing students' achievements in order to aid our own understanding of students' self-concept.

2.3. Self-concept

2.3.1. The importance of self-concept

The importance of self-concept lies in how it orientates human interaction and interpretation to this world. People might not be consciously aware of it because the structure of self-concept is like a 'black box' (DeSteno & Salovey, 1997, p. 390), meaning it is very complicated so the research results are rarely straightforward. It has been noted that self-concept is not only an outcome, but also a mediating variable that helps to explain what happens to us in daily life (Shavelson et al., 1976). Humans are greatly influenced by self-concept so, if there is a mismatch between how an individual thinks of themselves and what happens to them in reality, they could become confused and chaotic in their relationship with the world. The loss of a suited self-concept leads to psychological issues, such as under-achievement at school or in work and more serious consequences like anxiety, depression, substance abuse, suicide, and violence (Branden, 1994; Shavelson et al., 1976).

More specifically, maintaining a positive self-concept is the key for humans to function in daily life and to process the information from the world around them (Hattie, 2014). The functions of self-concept in our daily life are to maintain consistency, determine how we interpret everyday life experiences and to provide a set of expectancies (Burns,

1982). In other words, it is human nature to seek to maintain harmony between the self and the external world; the key to this balance is self-concept (Lecky, 1945). Firstly, in order to sustain consistency, a person must act in the actual world based on what or who they think they should be. Alternatively, a person would feel 'psychologically uncomfortable' when a conflict occurs between the self and the actual world (Festinger, 1962). Secondly, an individual's interpretation of daily life events is also greatly affected by self-concept. Every individual gives their own meaning to their personal experiences. For example, an elderly man might interpret someone offering him a seat on a bus as a kind act or alternatively as an insult. This depends on how this elderly man sees himself (Burns, 1982, p. 14). Self-concept also forms a cycle and reinforces our view of ourselves. This statement explained why a low-achieving student still holds a negative view of themselves despite the teachers' attempts to encourage and praise them. When receiving encouragement from teachers, the student with a low self-concept might still think in these terms: 'I must be dim, or else the teacher would not keep trying to tell me I am not' (Burns, 1982, p. 14). Lastly, when facing different tasks and life events, humans create a set of expectancies, which are based on a personal evaluation of the probability of success in certain tasks (McCandless, 1970). This also explains how self-concept orientates our behaviours. It is common in a classroom for a

student who already believes he or she will fail to have a diminished self-expectation, thereby causing his or her low self-perception to influence future behaviour (Burns, 1982). Since the development of self-concept is an interaction between individuals and their external world, theorists have also suggested that self-concept can be altered through intervention (Shavelson et al., 1976). Furthermore, its constructs were identified as multiple dimensions (Burns, 1982), meaning that a person can have a self-concept for their general behaviour and another self-concept for a specific area, such as sport or academic performance. This multidimensional view is now universally acknowledged (Marsh, 1985; Shavelson et al., 1976). This current study also adopted a multidimensional structure to examine student nurses' self-concepts. The multiple aspects of self-concept will be elaborated later in this chapter.

2.3.2. Teenagers' self-concept

Adolescence is one of the most critical periods in a lifetime because it involves the re-examination and re-evaluation of oneself physically, socially, and emotionally (Erikson, 1968). These processes are particularly challenging for adolescents because they often make judgments based on their inadequate knowledge and experience when conflicts between evidence and their beliefs arise (Burns, 1982). The complexity of

current developed or developing society increases teenagers' burdens during their self-evaluation process. Self-identification is often found to be unclear in this stage because they may have already reached physical maturity but not social maturity, which means, despite being fully grown and physically mature, they cannot be full adults because they have not reached social maturity yet (Burns, 1982). This disparity between physical and social maturation is most likely to result in an identity crisis because of their confused sense of self-awareness and their self-uncertainty (Erikson, 1968). The difficulty of self-identification is one of the primary obstacles for adolescents who need to develop a professional identity for their future careers because identity formation is a process in which individuals explore different possibilities and roles and that reflects or stabilizes who they are (Erikson, 1968). It can therefore be said that the formation of a professional identity is built upon a clear personal identity (Öhlén & Segesten, 1998). Based on Erikson's well-known self-system development theory published in 1968, four crises of adolescent identity development have been proposed by Marcia (1980): (1) *identity diffusion* refers to teenagers who have had no exploration nor made any commitments; (2) *identity foreclosure* means that a commitment has been made without any prior exploration; (3) *identity moratorium* suggests that the individual is experiencing the exploration; (4) *identity achievement* is the status in which the

adolescent has already explored and established his/her coherent identity. Nursing placements provide important opportunity for adolescents to develop professional identity because it allows students to explore the profession and to see what it entails. In the nursing profession, professional identity is related to professionalism in which an employee is able to recognise the value of their work and fill in their role content (Fagermoen, 1997), while professional self-concept refers if the self-perception from a person's job is consist with how this person perceive themselves (Davis, 1969). According to Fagermoen (1997), professional identity is a more general idea because it includes how individual nurses fit with their job content, as well as how they see their professional self (Arthur & Thorne, 1998). One's professional identity is based on how their professional self-concept is developed, which also implies that nurses need firstly to feel that their job is consistent with their self-perception (specifically their professional self-concept); once this has been achieved, they can then commit to the role and agree with the values of the profession (thereby acquiring a professional identity).

2.3.3. Historical overview of self-concept

The idea of self-concept was firstly conceptualized by William James in 1890 (Beane & Lipka, 1986) when he suggested that a person is able to know himself by observing the self and others. This early theory also outlined the difference between the I-Self and the Me-Self, which indicates humans have a private self and a public self. James also proposed that self-concept was hierarchical and multidimensional. He explained that self-concept is shaped within a hierarchical order with the lowest layer of self, the ‘material self’, and the middle layer, ‘social self’, followed by the highest layer ‘spiritual self’ (Bracken, 1996 cited in Cowin, 2002). James’ contribution has finally been recognised among psychological studies, despite the fact that the notion that self-concept should be constructed with the multiple domains had been ignored for the past one hundred years (Hattie, 2014). It is worth noting that, although self-concept is now seen as multidimensional, global self-concept is still taken into consideration because the multiple perspectives of self-concept embrace specific and global aspects; for example, the hierarchical framework of self-concept should include both specific self-concepts (e.g. academic self-concept) and general self-concepts (e.g. non-academic self-concept) (Marsh & O'Mara, 2008).

The psychological research during 1950s to 1970s was directed by *Behaviourism*, the mainstream theory of the period. Most of the researchers were in favour of assessing self-concept from a global unidimensional perspective without considering that self-concept is a potentially dynamic, multidimensional construct with hierarchical differences (Cowin, 2002). With the unidimensional construct, the researchers often had difficulty explaining the empirical results along with theoretical models and this period has been described by Hattie (1999) as the ‘dustbowl of empiricism’ of self-concept (Marsh & Craven, 1997). The methodological flaws in this period included the lack of support from a theoretical framework, problematic instruments, and an inadequate sample size. The validity and theoretical robustness of the framework and instruments that developed at that time were criticized (Marsh & Craven, 1997).

In 1976, Shavelson, Hubner and Stanton revisited James’ theory on self-concept and identified the problems of the unidimensional aspect. They proposed a new model (see figure 2.1) by including seven main characteristics of self-concept: (1) self-concept is organised or structured; in order to avoid dealing with a great amount of different experiences, humans tend to categorise the complicated experiences into simpler forms, which later influences how individuals think of themselves; (2) self-concept is multifaceted because humans are not born with a fully formed self-concept. How we

conceptualize ourselves is related to many factors, such as the status in school, social acceptance, physical attractiveness, and ability, which all contribute to the multifaceted feature of self-concept; (3) self-concept has a hierarchical order, as mentioned earlier; self-concept not only includes a general aspect, but also specific aspects. Furthermore, taking its specific aspect as an example (e.g. academic self-concept), it can also be divided into different self-concepts or different academic modules (see figure 2.2); (4) the general self-concept is more stable than the specific self-concept because the specific self-concept is at the lower level of the hierarchy than the general self-concept, which is easily altered depending on the situation. For example, for an athlete, the contest results may influence his or her specific self-concept but not his or her general self-concept; (5) self-concept develops with age. It is also important to note that self-concept is not multifaceted at a very young age because young children obtain their self-concept from a global, undifferentiated view. When growing older, children start to differentiate between themselves and the world. By the time they are able to recognise the difference between I and Me, the multi aspects of self-concept start to develop; (6) self-concept can be evaluated by individuals by comparing oneself with the 'ideal self' or with peers or feedback from significant others. In addition, how humans self-evaluate can be influenced by past experiences, culture, and societal

norms; (7) self-concept is related to other constructs and is situationally specific. If a person values his or her academic performance because he or she always achieves high grades, he or she might have a higher self-concept when it comes to schoolwork but not physical education.

Although Shavelson and colleagues' review of James' early work contributed greatly to modern psychological research on self-concept, they still struggled to validate their work with systematic measurements (Marsh, 1990). This was one of the major obstacles for the researchers during this period (Byrne, 1984). Fortunately, with the invention of sophisticated measuring instruments, such as factor analysis, Shavelson's model has been validated by later studies (Marsh, 1990). Factor analysis has been applied to capture different aspects of self-concept and Shavelson's original model was reformed by Marsh and Shavelson in 1985 (See figure 2.2). The most significant difference between the original model and the revised model is that there are now two higher orders within academic self-concept, Math/Academic Self-Concept and Verbal/Academic Self-Concept, instead of one, Academic Self-Concept in the original model. The additional higher order was introduced due to the low correlation found between math self-concept and self-concept in other academic modules, which also confirmed that academic self-concept is very subject specific (Marsh, 1985). In fact, it

was also found that the separation of verbal and math self-concept provided a better framework with which to explain students' academic self-concept from the empirical data (Marsh, 1985). This revised model later became the fundament of the Self-Description Questionnaire (Marsh & O'NEILL, 1984) for measuring and exploring the multidimensionality of self-concept and the relevant factors. The Self-Description Questionnaire was later adapted into a framework for the Nurses' Self-Concept Questionnaire (Cowin, 2002) to investigate the multifaceted nurses' self-concept.

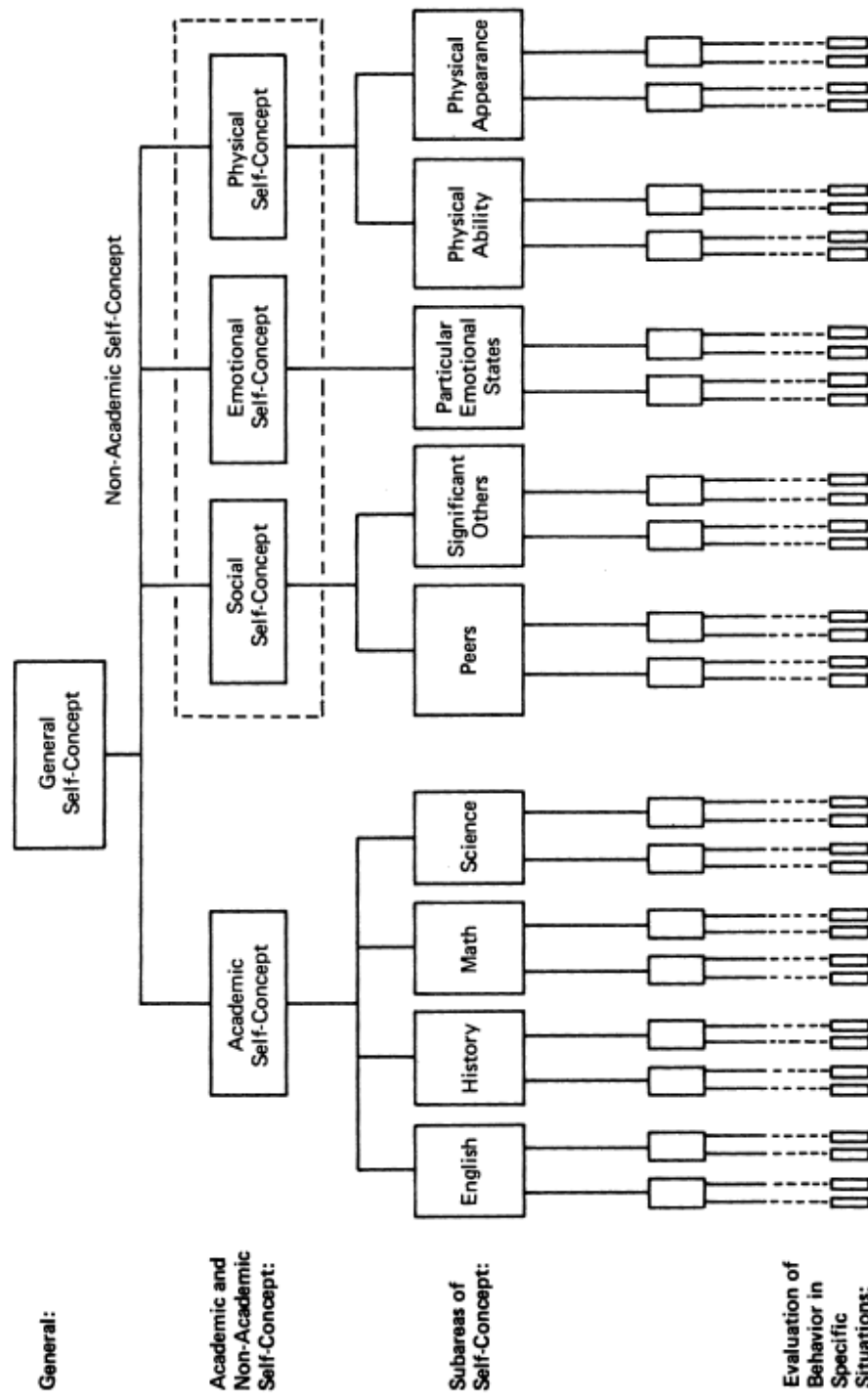


Figure 2-2 Self-Concept Model by Shavelson, Hubner and Stanton (1976)

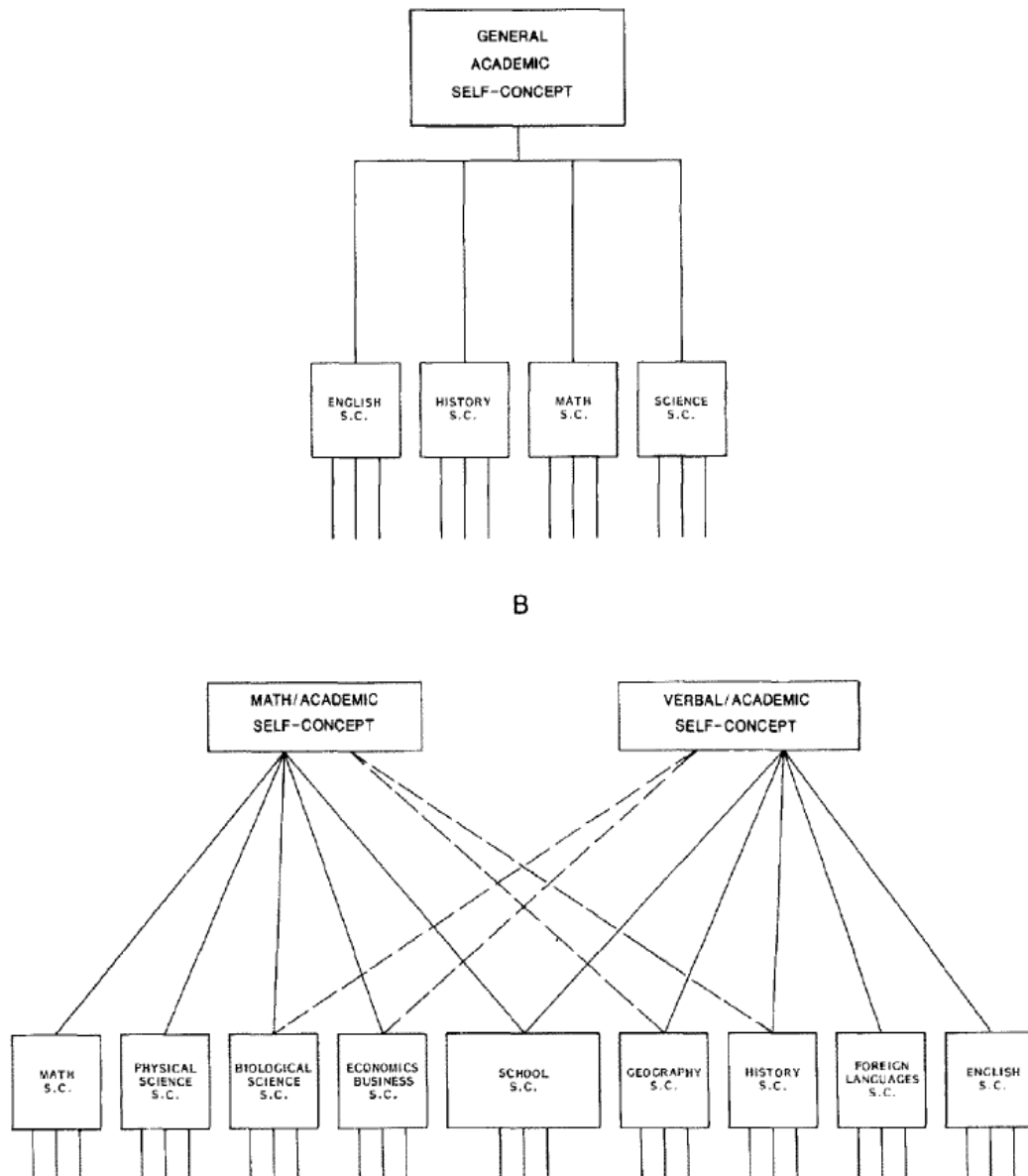


Figure 2-3 Revised Model of Self-concept by Marsh and Shavelson (1985)

2.3.4. Nursing self-concept overview

It is not surprising to see that self-concept has caught researchers' attention in the field of education, interpersonal relations, and the health care sectors given the influence of

self-concept on human daily life. The self-concept of nurses at work has been overlooked until recently (Cowin, 2001). Early literature has noted the influence of professional self-concept on nurses because nurses must acquire self-confidence and self-esteem in order for their professional performance to be maintained to an expected standard (Ellis, 1980). Ample nursing literature has echoed the importance of nurses' self-concept because it has been identified that most nurses have experienced low self-esteem at some point (Moore, Kuhrik, Kuhrik, & Katz, 1996); this issue is closely related to stress, burnout, attrition (Cowin, 2002), and a lack of critical thinking skills (Beeken, 1997), as well as an unclear professional identity (Arthur, 1992; Arthur & Randle, 2007). Nurses' self-concept is also very influential to their career choices (Davis, 1969), graduate retention (Ellis, 1980), self-evaluation (Dagenais & Meleis, 1982), job satisfaction (Judkins & Rind, 2005), and their social intimacy and stress levels (Moore et al., 1996).

In the literature, the importance of self-concept in a career had been identified because it can be used as an assessment of the distance between the job that individuals choose and the self-perception he or she holds. People tend to choose a job that suits the view they hold of themselves (Davis, 1969). One major reason that low professional self-

concept has become an issue is the complexity of today's clinical environment: the excessive workload, hierarchical structures, colleague relations, and staff-patient communication. These factors often increase challenges in the workplace; nurses therefore find that the everyday realities of the profession do not match the view they have of themselves.

Ample empirical evidence has already suggested that low professional self-concept has a direct impact on nursing retention rates and the on-going nurse shortage issue; however, there is very little empirical evidence of nursing students' professional self-concept development during the first clinical placement. There are relevant studies on nursing students' professional identities and self-esteem, but these studies lack any focus specifically on how placements influence the early development of students' professional self-concept. For example, Adams and colleagues (2006) argued that professional identity was investigated among first-year students from various health-care majors; in these investigations, instrument tools only focused on how these students contribute to the team, but not their interactions with co-workers, which is also an key element for nurses' self-concept. In Edwards, Burnard, Bennett, and Hebden (2010), nursing students' first placements were examined regarding their self-esteem

change after the placements; however, Edwards focused on ‘general self-esteem’ rather than professional self-perception. Most studies consider final year nursing students or newly graduated nurses (for newly graduate nurses see (Cowin & Hengstberger-Sims, 2006; Kim, Hwang, & Lee, 2014); for registered nurses see (Arthur et al., 1998; Cao, LIU, TIAN, & GUO, 2012; Cowin, Johnson, Craven, & Marsh, 2008; Hensel, 2011); for final year students see (Cowin & Hengstberger-Sims, 2006; Lai et al., 2008); for undergraduate students see (Angel, Craven, & Denson, 2012); for second and third year undergraduate nurses see (Arthur, 1995; Arthur & Thorne, 1998). Since the studies above are mostly on final year students, the lack of investigation into the first placement is therefore a gap in researchers’ understanding of professional self-concept development at the early stage of nursing education. The research outcomes of this study that based on the investigation of nursing students’ first placements is able to facilitate further research on suitable intervention and support to prevent potential low self-concept caused by clinical placement.

2.3.4.1. Development of nursing self-concept

As mentioned before, James’ claims about the multiple dimensions of self-concept were not accepted until 100 years later. The researchers during that period were convinced

by the unidimensional perspective, which led to ‘dustbowl empiricism’. The initial development of the nurse self-concept literature seemed to be in a muddle, too, before the multiple dimensional view was accepted by nursing researchers (Cowin, 2002). The ambiguous methodology hindered the progress of the research. In the past, researchers did not clarify within-construct constructs before conducting various between-construct experiments (Arthur & Thorne, 1998). Similar to the ‘dustbowl empiricism’, researchers described nurses’ self-concept from a global view of self-esteem, rather than from a within-constructed and multidimensional view (Stein, 1995), and ‘threw in’ a measure of self-concept together with other variables and cherry-picked the outcome (Cowin, 2002). Particularly under such circumstances, researchers focused on the causal effects of self-concept on other constructs without considering the influence of the within-construct aspect.

In addition, nursing researchers were concerned about low self-concept issues influencing nursing attrition and performance, but there was no valid questionnaire for multidimensional assessment until the early 90s (Arthur & Randle, 2007; Madjar, 1997; Moore et al., 1996). The Professional Self-Concept Nurses’ Instrument (PSCNI) was developed by Arthur (1992) and it became one of the earliest nurses’ self-concept

instruments based on a within-construct and multidimensional view (Cowin, 2002). PSCNI was specifically created from a multidimensional model of self-concept theory by Wylie (1974) and Burns (1979) and included 56 positive and negative statements. The pilot study recruited 179 nursing students from Australia. Exploratory factor analysis determined three factors, namely professional practice, satisfaction, and communication, despite Arthur proposing seven factors in his original framework: knowledge, skill/competence, caring, communication/empathy, flexibility/ creativity, and leadership. Based on the three elements which derived from the factor analysis, Arthur documented 27 items in total: 16 in the professional practice scale, 7 in the satisfaction scale, and 4 in the communication scale (Cowin, 2002) the satisfaction scale evaluates if they feel content with work and the work environment (Arthur, 1995, p. 332).

2.3.4.2. Critical transitional point

Recent studies have noted that there are some ‘critical points’ that decide how nurses’ self-concept develops (Cowin & Hengstberger-Sims, 2006). Some critical factors have been specified due to their influence on graduate nurses’ confidence levels and retention rates, such as reality shock, work readiness, and interpersonal conflict (Cowin &

Hengstberger-Sims,2006). Firstly, reality shock seems inevitable when starting a new job, but it is the lack of professional socialization that intensifies nurses' reality shock during their transitional period. That is to say, despite reality shock occurring often, the professional socialization determines whether they can manage that shock. Professional socialization includes practical skills, professional knowledge, nursing identity, occupational traits, value norms, and self-concept (Howkins & Ewens, 1999; Mamchur & Myrick, 2003). Professional socialization is described as a buffer to reality shock; however, skill and knowledge are the priorities for most training programmes and the latter, as well as nursing identity and occupational traits, are often overlooked in nursing education and in the clinical workplace (Cowin & Hengstberger-Sims, 2006, p. 61). The potential problem of this neglect is that students often find a gap between the workplace and the knowledge they have learnt, which consequently increases the occurrence of reality shock (Cowin & Hengstberger-Sims,2006).

Secondly, work readiness refers to whether or not graduate nurses are ready to work independently. Given the increasing workload in hospitals today, new nurses are expected to fit into the environment quickly and to perform as soon as possible (Greenwood, 2000); they are also often in the lowest hierarchical position in the

hospital. Greenwood (2000) reported that new nurses try their best to fill in their position; however, they do not receive any sense of respect in return. In order to prepare new nurses' work readiness, the mentorship system has been found to be effective, but it is also problematic because the system increases the mentors' workload and thereby introduces staff relation issues (Greenwood, 2000). A lack of work readiness is also common among nursing students. Nursing students who are adolescents are still developing their competence and confidence; despite this, they are asked to face the problems they may never have encountered such as death, ethical issues, and the hierarchical structure of the workplace. Under such circumstances, feeling unready can cause anxiety and stress. Some nursing students reported that the realities of the workplace forced them to learn, but there are still many students who feel frustration and who doubt whether they are suited to the nursing profession (Lai et al., 2008).

Lastly, interpersonal conflict is one of the main sources of stress for first year nurses (Greenwood, 2000; Strachota, Normandin, O'Brien, Clary, & Krukow, 2003). Interpersonal conflict has been defined as 'conflict between members of a group manifested in overt and covert non-physical hostility' (Duffy, 1995, p. 12). Combined with stress and anxiety, working in a 'non-supportive environment' (Floyd, 2003, p.

26) potentially jeopardizes new nurses' self-confidence. It has been found that new nurses are more likely to be the victim of interpersonal conflict due to their vulnerable position in hospitals. The conflict is also a strong indicator of new nurses' attrition (Strachota et al., 2003) and emotional disturbances (Ross & Clifford, 2002). Ironically, studies have also found that those with low self-esteem work harder in order to be accepted by the group (Heatherton & Vohs, 2000); such a situation has been described as the 'final insult' in a workplace in which staff experience high stress and low job satisfaction (Cowin, Craven, Johnson, & Marsh, 2006, p. 61).

2.3.4.3. International comparative study on nurses' self-concept

The development of self-concept is the result of interaction between the self, the external world, and other people. One of the largest international scale nurses' self-concept studies focusing on cross-cultural settings confirmed that culture and society variations influence nurses' professional self-concepts. This study involved 11 countries and showed significant differences among nurses' self-concept with cultural variance (Arthur et al., 1999). The study specified that Korean nurses have the lowest self-concept, while nurses in New Zealand have the highest. Generally speaking, in this study the participants in Anglo-Celtic cultures were in the upper end of the self-concept

spectrum, while the Asian group was in the lower end. In the same study, the result suggested that most of the participants valued their relations with colleagues and felt confident about their professional competence and flexibility as nurses. Yet they also reported that this profession does not match their expectations and there is the strong feeling that the sector is not respected by other professions. In terms of confidence in providing sound patient care, the participants in China, Korea, and Hong Kong scored at the lower end of the scale, while those from the Philippines, Sweden, and South Africa scored at the upper end. New Zealand, Canada, Singapore, Australia, and Scotland were in the middle. It is interesting to find Singapore as the only Asian country in the middle scoring group. It is probably that Singapore is demonstrating its mixture of east and west cultures. From the results of China and Korea, the common cultural roots can be observed from both countries (Arthur et al., 1999).

Most of the nurses in the cross nation study above mentioned the importance of collegial relationships and showed confidence in nursing competence, but the nurses from China and Korea showed a relatively lower score on their confidence levels. From this evidence, it could be expected that Taiwanese nursing students may not show too much confidence in their competence in regards to patient care because Taiwan shares

a similar culture with China and Korea. Furthermore, the participants in this thesis were all novice, therefore making it more likely for them to feel less confident in their abilities. As mentioned the last paragraph, regardless of countries, nurses emphasize their relation with colleagues is important. This also can be observed in the current thesis. For students, there are more reasons to have good relations with nurses during placement as the literature has documented that that nursing students can learn through interacting with other nurses. That is to say, it is likely that students develop positive staff relations to access more learning resources and to be a better learner (details see 2.4.5)

2.3.4.4. Attention to placement-related attrition caused by low self-concept

The literature shows that the placement experience has been identified frequently as the reason for the nursing shortage because it has a direct influence on students' decision to leave the profession (Eick, Williamson, & Heath, 2012). There are two issues documented and considered relevant to students' professional self-concept development during placement (Eick et al., 2012). First, students have unpleasant experiences when observing poor nursing practice and in an unsupportive placement environment (Wray, Barrett, Aspland, & Gardiner, 2012). Supportive evidence

indicated that 88% of students agree that having placements in a nursing home is rather frustrating because it is not where students can learn good nursing practice (Last & Fulbrook, 2003). Additionally, it is not surprising that witnessing poor nursing practice in busy wards that are understaffed has a direct impact on students' commitment to nursing (Brodie et al., 2004). As Davis noted, professional self-concept builds upon whether a person's occupation role provides an image that suits them. When observing bad practice, a self-concept conflict occurs between what a nurse should do and what students see in reality. Such confrontation contradicts the values that students hold for this profession and makes them question whether this is a role they want in the future.

Second, students are often concerned about other staff's acceptance of them in the workplace (Eick et al., 2012). The importance of a sense of belonging is evident by its relation to the establishment of self-concept (Hagerty & Williams, 1999). A person cannot maintain adequate self-esteem if they experiences exclusion from the group that they value (Leary, Cottrell, & Phillips, 2001) and feelings of alienation undermine professional learning, especially for a profession like nursing, in which learning heavily relies on interaction and cooperation with the group (Wenger, 2000) (details see 2.4). According to Maslow (1970), humans are able to continue moving forwards to higher

levels of need when this sense of belonging and self-esteem are maintained. The following empirical evidence demonstrated that the level of staff support often determines students' perception of being included in the team. For instance, a positive correlation was found between staff support and students' staying in a course because students expressed that their pleasant placement experience emerged from staff supporting their learning needs (Ujváriné et al., 2011). Conversely, a lack of support from the wards was often raised by those students who expressed their negative placement experience and intentions to leave nursing (Wray et al., 2012). Based on these research outcomes, it can be concluded that students' perception of lack of support plays an important part in placement-related attrition.

2.3.4.5. Possible reasons for students not feeling supported

There are two possibilities identified for students feeling unsupported: one can be seen from the management perspective; and the other one from the learners themselves. The management support in the wards has been reported as vital because it influences staff workload and their attitude towards accepting students as co-workers and sharing knowledge with them (Brodie et al., 2004; Last & Fulbrook, 2003). Teamwork and co-worker interaction are essential in terms of nurses' professional performance; however,

the nursing curriculum is focused more on preparing students' interactive skills with patients and as a result overlooks their ability to communicate with staff nurses. According to the learning objectives for first-time placement students in Taiwan, most of the aims for placements focus on professional competence and patient caring. The only objective relating to student-staff relations states "nursing students are able to learn and recognise their role and function in the medical team" (see table 3.1). However, this is a general statement that lacks the specifics of the learning aims students must achieve. Nevertheless, although recognising that their role and function is one of the learning objectives, there is no equivalent evaluation item for co-worker interaction. Another learning objective relating to professional communication is whether students are able to verbally pass on patients' condition to the nurse who works on the following shift. Such communication is limited to professional information exchanges. Whether or not they can bond with the staff or be accepted by the group is subsequently ignored. According to the Communities of Practice (COP), learning is based on the interaction with the community. If the student-staff interaction is only limited to the most necessary topics and they are unable to acquire a sense of belonging, their learning would be compromised in clinical settings.

2.4. Placement learning and Legitimate Peripheral Participation

Because of the development of industrial economies, higher educational institutions now emphasise students' employment capacities so the curriculum becomes occupationally oriented and placement learning plays an important role in higher education. It is the best for students to experience both schools and work settings so that they would have smooth transitions into professional practice (Billett, 2009). For certain subjects, especially those relate to health care industry, students are expected to engage with authentic settings of practice and able to connect theory and the practical skills in an integrated way.

Many universities have seen preparing students for specific occupations as one of the primary tasks (Lomas, 1997). Those occupations specific courses are expected to support students in their transitional period and to alleviate students from the theory-practice gap as well as reality shock when they first enter the professional practice. That is, universities aim to develop students' ability to engage and adapt effectively in workplaces. Such shift has been long existing and exercised by the North America co-op movement, through its provision of extensive periods of workplace placements (e.g. internships) and also through practicums in such courses as medicine, nursing,

physiotherapy in a lots of places and for a long time (Boud &Solomon, 2001). This is the results of the demands from students, employers and governments' expectations (BIHECC, 2007).

According to Billet (2009), placements learning aims to equip students with the knowledge and skills that suit workplace, rather than meeting the demands from societies and economic goals. At workplaces, the situations may change constantly so it requires the employees to also constantly adapt updated knowledge and criticality for different scenarios at work. In some cases, one's competence for their professional work is not limited to technical knowledge and it often involved with operating the facilities. It is logical to see the need for students to be familiar with workplace in advance. Through placement learning, students benefit from the authentic experience and the training of the integration of theory and professional practice (Billiet, 2009).

In the following paragraph, based on Legitimate Peripheral Participation, the literature will detail how trainees start to learn in a workplace as outsiders. In the section 2.5, the concept of Communities of Practice will be introduced to demonstrate trainees learn not only technical knowledge and skills in workplace, more importantly, the interaction with staff is the key for successful placement learning.

On the basis of Legitimate Peripheral Participation by Lave and Wenger (1991), learning has been defined as a process that learners have to participate in communities and acquire the knowledge and skills that allow them to move toward to full participation of the practice of a community. The interaction between newcomers and old-timers therefore become essential in this process. Lave and colleagues then focus on how newcomers and old-time build their relation based on activities, identities, artefacts and communities of knowledge and practice. Legitimate peripheral participation consists of an important concept, which is situated learning, although the legitimate peripheral participation was initially developed upon apprenticeship. The following paragraph will introduce how the idea of apprenticeship was modified by the researchers to situated learning, then from situated learning to legitimate peripheral participation.

In 1988 when this topic began to develop, scholars considered apprenticeship was the act of legitimate peripheral participation (Lave and Wenger,1991). In that text it was simply an observation about the tailors' apprentices within an analysis addressing questions of how apprentices might engage in a common structured pattern of learning

experiences without being reflected, internalised and mechanical copiers of everyday tailoring tasks make apprentices become skilled master tailors (Lave and Wenger, 1991, p.30). However, researcher realised there is a need to re-examine the concept of apprenticeship for legitimate peripheral participation because scholars were convinced that apprenticeship is not merely mechanic copier but consists of an actual educational training with cultural and historical base. Because of this reason, the researchers began to see learning as situated learning rather than apprenticeship.

It is important to bear in mind that situated learning is not informal, experienced-based learning. It integrates the relational character of knowledge and learning, where the meaning of learning is negotiable and the nature of learning is engaged and dilemma driven. Lave and Wenger (1991) emphasise that, in situated learning, learners should be seen as the whole person, rather than only receiving factual knowledge about the world. When it comes to professional training, content-specific knowledge are consider the most valuable knowledge to acquire during training courses. Despite of the value of content-specific knowledge, Lave and Wenger restate the importance of general knowledge in specific circumstances. Generality is often associated with abstract representations and abstracts must be brought into specific circumstances.

The fundamental concept for peripheral participation is about learning happens in the social world. By changing where to learning and reshaping idea of the subject or career, junior trainees get to develop their identities and membership within the community. Moreover, legitimate peripheral participation is involved with relations of power because, for trainees, their purpose is to gain full participation. Lave and Wenger (1991) suggest that complete participation refers to a closed domain of knowledge or collective practice for which there might be measureable degrees of ‘acquisition’ by newcomers. The scholars also emphasise that the word ‘peripherality’ is a positive term and it includes a dynamic concept. Moreover, the use of peripherality means an opening, a way of gaining access to sources for understanding through growing involvement.

2.5. Communities of Practice (COP)

2.5.1. The fundament of community of practice: A social theory of learning

This thesis applies Wenger’s communities of practice to the current research which discusses nursing students, who are in a community of practice when undertaking placements in hospitals. Before detailing Wenger’s theory, ‘the social theory of learning’ will be introduced as this is the basis of Wenger’s communities of practice

theory. A social theory of learning is fundamentally different from the traditional style of education. Wenger (1998) explain that traditional education emphasises the transparency of learning and sees the learning process as small segments, for example, it should contain a beginning, an end and an outcome evaluation.

A distinctive feature of a traditional classroom focuses on teachers and exercises of the subjects, which means students' participation may have no connection to the real world. For instance, computers can assist students to have an individual session and drill practice. During the evaluation process, students have to individually demonstrate their knowledge of the context, and, in this setting, collaboration is considered cheating (Wenger, 1998. P.3). Students often feel that learning is boring and rigid because the contents are irrelevant to the outside world. Different from the traditional way of learning, a social learning theory focuses on the interaction with other people. On the basis of social theory of learning, the acquisition of knowledge and skills comes from participation in the real world and experience. Learning is not limited to classrooms, instead, it is in our daily life, like eating and sleeping. In order to conceptualise how community of practice works, Wenger propose four premises to outline what matters about learning and the nature of knowledge, knowing and knowers.

1. We are social beings. This fact is a central aspect of learning.
2. Knowledge is a matter of competence with respect to valued enterprises, such as singing in tune, discovering, scientific facts, fixing machines, writing poetry and so forth.
3. Knowing is a matter of participating in the pursuit of such enterprises, that is, of active engagement in the world.
4. Meaning, our ability to experience the world and our engagement with it as meaningful, is ultimately what learning should produce.

(Wenger, 1998, P.4)

Wenger reminds us that participation in learning that is predicated on a social theory of learning is not “just about engagement in certain activities with certain people, but an encompassing process of being active participants” (Wenger, 1998, p.4) in the group and developing our own identity it is a form of belonging in relation to the group by interacting with the members. Through interaction, the participants have the opportunity to see what they should and should not do, who they are and how to interpret what they do.

After identifying what learning, learners and knowledge are about, Wenger integrates four essential components in a social theory of learning (see figure 2-4).

1. Meaning: a way of talking about our (changing) ability, individually and collectively, to experience our life and the world as meaningful.
2. Practice: a way of talking about the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action
3. Community: a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognisable as competence.
4. Identity: a way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities.

(Wenger, 1998, P.5)

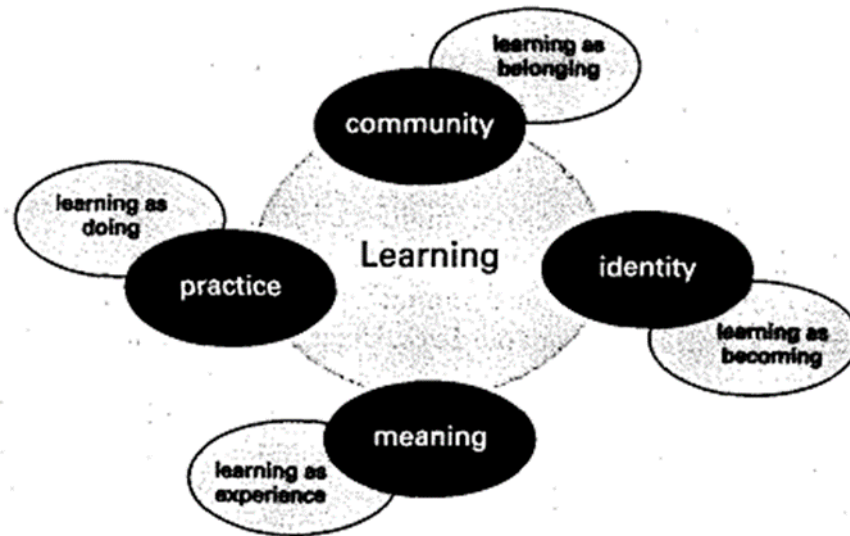


Figure 2- 4 Components of a social theory of learning: an initial inventory by Wenger
(1998)

2.5.2. Different perspectives of learning and how communities of practice change the meanings of learning

Starting with what ‘perspective’ means, this paragraph will depict what learners should be provided with in community of practice. A perspective does not give us step by step instructions about how things should be done but provides guidance about what to notice, what difficulties may occur and how to deal with the difficulties. In Wenger’s book, *Community of Practice*, the perspective of learning has been re-examined, this is what distinguishes learning in community of practice and learning in traditional settings. For example, traditional approaches to education see knowledge as small

fragments that can be separated, assembled in our brain. These small pieces of information are still isolated from any distraction so they can be expressed in short but clear ways. Alternatively, on the basis of communities of practice, learners are involved in participation in the real world. Through participation, students are engaged in meaningful practices, provided access to resources that enhance participation. Most importantly, “learners experience various actions, discussions and reflections in the community they value where motivates them making contribution to it” (Wenger, 1998, p.10).

In our daily life, we are members of different communities, communities of practice are an integral part of our daily lives, and some of our membership is more formal than others. If we look at our life with the concept of community, very likely we can identify our place in several communities, where we currently belong to and where we might go in the future. In some communities, we might have a peripheral position and try to learn in order to have full participation in the future (Wenger, 1998).

Communities of practice also redefine what learning is, at an individual, community and organisational level. For the individual, since they consider themselves part of the community, it is more likely for them to engage in community activities and contribute to this community. The individuals are not the only party that benefits from community of practice, the community not only has an opportunity to recruit new generations of members but also to refine their practice for improvement. For the organisation, learning is a way to sustain the interconnected communities of practice through which an organization knows how to become effective and valuable as an organization.

Wenger (1998) conceptualise learning is an inseparable activity. 'It is not something we do when we do nothing else or stop doing when we do something else. There are times in our lives when learning is intensified: when situations shake our sense of familiarity, when we are challenged beyond our ability to respond, when we wish to engage in new practices and seek to join new communities' (Wenger, 1998, p.8). In community of practice, learning is not limited to acquisition of skills and knowledge. Wenger (1998) suggests that even failing to learn what should be learnt in a given situation often involves some learning.

2.5.3. Social practice

The concept of practice is not just doing tasks. Historical and social contexts have to be taken into consideration so what we do is historically and socially meaningful, meaning practice cannot stand alone without social interaction (Wenger, 1998). Such a concept of practice includes both the explicit and implicit information. “The explicit parts include the language, tools, documents, images, symbols, well-defined roles, specific criteria, codified procedures and regulations” while implicit components refer to tacit conventions, subtle cues, untold rules of thumb, recognisable intuitions, specific perceptions, well-tuned sensitivities, embodied understandings, underlying assumptions and shared world views” (Wenger, 1998, p.47). People might not talk about these explicitly in the community but these are recognisable signs of membership.

One’s involvement in communities should include both acting and knowing. That is to say, they should engage in physical and mental activities. Both of them are given meanings in specific practices. According to Wenger (1998), the term practice is sometimes used as an antonym for theory, ideas or talk, the term *practice* into a certain category because community of practice should be conceptualised as all of these, even if sometimes what we say is not always consistent with what we do. We have our own way to see the world and interpret the world with our own

perspectives so community of practice is the place to demonstrate development, negotiation and reformation.

2.5.4. The theoretical frameworks in Communities of practice

Social interaction is vital to learning as it has been stated that ‘the social process of developing shared understanding through interaction is the natural way for people to learn’ (Hiltz, 1994, p. 22) and that it promotes individuals’ ‘epistemic fluency’ (Kreijns, Kirschner, & Jochems, 2003, p. 338). Epistemic fluency has been defined as ‘the ability to identify and use different ways of knowing, to understand their different forms of expression and evaluation, and to take the perspective of others who are operating within a different epistemic framework’ (Morrison & Collins, 1996, p. 109). Similarly, a framework for understanding the social learning system has been proposed by Wenger so that we can understand learning as a social process. Wenger (2000) explained that how we define our professional competence is based on the criteria that have been made by the members of that professional group. These criteria include not only professional ‘hard knowledge’ (e.g. protocols and theories), but also an individual’s relationship with the community because these relations provide more insights into the profession. The latter is labelled the ‘*Social learning system*’: ‘knowing is an act of participation in

complex social learning system' (p. 226). The following paragraphs will outline: (1) two frameworks used to conceptualize a social definition of learning, namely *social competence* and *personal experience*; (2) three modes entailing how learners interact with communities in a social learning system: engagement, imagination, and alignment; (3) finally, three effects that emerge when participating in a social learning system (Wenger, 2000).

2.5.4.1. *Social definition of learning*

A person's awareness of their professional competence is based on the norms that have been established by their communities. Being knowledgeable is a demonstration of the competence defined by a specific group; however, how people perceive knowledge is an individual and unique process as everyone has their own way of learning and interpreting new experiences. Learning occurs when a gap can be identified between our existing competence and what we experience in the new environment (Wenger, 2000). A person's competence can influence their experience and vice versa. Wenger (2000) gave an example that trainees are eager to learn in companies by doing what the current staff does so they can be part of the group. The trainees experience their inadequate competence so they intend to acquire the competency level defined by the

staff. Alternatively, another example can illustrate how new experiences influence existing competence: a competent staff member goes to a new place such as a conference. By interacting with people with different perspectives, the member of staff returns with a new experience and they might want to re-shape their competence, which was originally defined by their professional group. From the example above, a social definition of learning is constituted by social competence and personal experience with a two-way relationship; learning begins when a gap exists between these two components.

2.5.4.2. *Mode of belonging*

There are three ways for learners to participate in the social learning system: (1) *engagement* refers to individuals interacting with and exchanging information to produce actual outcomes (e.g. complete a task or attend a meeting). By engaging in this way, people are able to know their role and function in the specific setting; (2) *imagination* relates to the construction of a scenario in this community, which facilitates what further action can be taken and how to respond to possible situations. It is important to note that ‘imagination’ here is not fancy; instead, it should include scenarios based on facts. This ‘serious act of imagination’ directs how we make sense

of the self and our participation in the community. After all, it is unlikely that learners have a chance to practice in every possible situation; (3) alignment refers to the preparation to apply or engage one's competence with other processes. The concept of alignment is a mutual process of coordination, interpretation, and actions (Wenger, 2000); for example, collaborating with different departments. Researchers have noted that each mode has its own unique features, although all the modes can often be seen in the same learning context. Depending on types of learning, one mode can be more dominant than the other two. For instance, for students who attend clinical placements for the first time, they can participate in communities of practice (COP) by focusing more on engagement and imagination than alignment. Even when they are unable to be involved in some cases, they can always imagine the procedures by observing staff.

2.5.4.3. Three dimensions of the social system

Interacting with the community plays an important role in the learning process. It is an essential way for learners to know about the community. Community is one of the most important elements in social learning systems because it is where learners can observe the essential competence that is decided by the members of the community. As noted, humans form communities to reflect collective learning: 'from a tribe around a cave [...] to a group of nurses in a ward' (Wenger, 2000, p. 229). There are different

dimensions seen as signs of competence when interacting with the community: communities of practice; boundaries and identities. First, the *community of practice*: in order to be deemed competent, the newcomer has to develop an understanding of this community and contribute to the group, which has been described as ‘*joint enterprise*’.

The individuals have to bond with each other so that *mutuality* can exist in the community. In other words, being competent also refers to whether or not one can interact with the community members and gain trust from each other. After joining the enterprise, community members start to build a ‘repertoire’ of the community and appropriately apply it in work situations. The *repertoire* here indicates communal resources, such as languages, routines, sensibilities, artefacts, tools, stories, and styles.

The second dimension for defining competence in social learning systems is boundaries. Generally, boundaries are seen as negative because it represents a line that other people cannot easily cross; however, it is not necessarily bad in social learning systems because boundaries enable learners to interact with others. In other words, communities of practice theorists see boundaries as learning opportunities, rather than limitations. It should be noted that boundaries still arise even for people in the same profession because of the many different ways to engage with colleagues, different repertoires, and working abilities (e.g. nurses from different specialties). In a

community, boundaries emerge when an individual finds that their competence does not match with their experiences. For example, two researchers work for the same project, but one of them finds the research method he or she is familiar with (competence) is not really suitable to the project (experience inadequacy). This is when a boundary exists between the two researchers and the gap drives the researcher who experiences the gap to learn the new research method. Although the gap between competence and experience creates learning opportunities, it is important to remain aware of the fact that if the gap is too great, effective learning is unlikely to happen because the sense of 'not being in the same community' would override the motivation of crossing boundaries so that learning is discouraged. Conversely if the gap is too small, it does not provide enough motivation to learn either because the gap is so trivial that the individuals do not perceive dynamism even they bridge the gap. Three dimensions are noted to assess the effects of boundaries in social learning systems. (1) *Coordination* between two parties is one way to evaluate whether a boundary can be bridged. For example, if appropriate action and use of equipment between two divisions can be well coordinated, it determines whether the boundaries are their friends or foes. (2) *Transparency* involves how well one can explain the necessary information and deliver it to others who does not have the same competence on the same matter. This

decides how a pathway is created towards bridging the boundaries. (3) *Negotiability* reflects 'relations of power among parties' (Wenger, 2000, p. 234). If the power is very unbalanced between parties, the possibility for negotiation is decreased; therefore the boundaries are more likely to remain unchanged, rather than being overcome.

Wenger (2000) has identified a few interactive processes that facilitate the bridging of boundaries. For example, *boundary encounters* enable newcomers to expose themselves to the new practice; and *boundary practice*, which is more practical than mere encounter. The newcomers undertake what the members of community do so they can understand this enterprise and the repertoire. The first and second types focus learners on how they bridge the gap. The third type, *peripheries*, emphasizes the role of communities on how to engage learners with some boundaries for learning purposes. The term *peripheries* in a context of communities of practice means engaging learners with certain tasks that are not too difficult but still essential enough for them to see the expertise in the area. Communities often serve a function in providing people who are curious or intend to become a member a chance to gain more insights into what they do. It is useful to bridge boundaries in order to connect outsiders with the community in peripheral ways.

The third dimension to determine competence in the social learning system is to develop one's identity in connection with the community because the amount a person knows of their profession is linked inextricably with how they see their professional identity (Wenger,2000). One's professional identity determines what an individual needs to learn and know. Having detailed information that is irrelevant to the profession or failing to share vital knowledge with colleagues would be seen as contrary behaviours in the community. In the social learning system, the importance of identity can be summarized by the following: 'we define ourselves by what we are not as well as by what we are, by the community we do not belong to as well as by the one we do' (Wenger, 2000, p. 239). Identity plays an essential role in the social learning system, as mentioned previously; it filters information so we know the competence that we must acquire and the people we should work with to gain mutual understanding. In addition, identity influences the way we deal with boundaries. For example, if a head nurse finds him or herself unfamiliar with an approach for post-operation infection control, he or she might consult books and journals rather than colleagues because his or her identity as head nurse means that their asking for help could be seen as a sign of ignorance and inferiority. A new nurse, however, might see colleagues as informative sources as his or her identity as a new nurse gives them the perspective that being a learner is

acceptable. Learning is not only about the exchange of intellectual information, but also widening our identity so it can achieve the most ideal route for the profession. Three vital conditions are outlined for the development of identity in social learning systems: (1) *connectedness* refers to the sense of belonging in the community. The strength of one's professional identity develops upon on their connection with the community through shared information, experience, and responsibilities; (2) *expansiveness* emphasizes the width of identity. The scholar suggests that the development of identity should reach across communities and boundaries. As such, in the process of identity seeking, experience and new possibilities would also be expanded (Wenger, 2000); (3) *effectiveness* decides whether an identity is able to be developed because identity is seen as a 'vehicle' for participating in the community. The idea of effectiveness in identity focuses on whether an individual can initiate participation and actively engage himself in order to be embraced by the community. Identity can also become a hindrance for non-participants because it affects one's effectiveness in engaging with the group; for example, if nursing students identify themselves as learners, this motivates the engagement, but if they think they might add extra workload to the group because of their incompetence, they are likely to withdraw from the community because they do not see any contribution they can make.

2.5.5. Why is interaction so important in the social learning system? From the perspective of different learning metaphors

Due to the ever-changing nature of society and working life, as well as the influence of globalisation, humans need to process knowledge derived from rapid development of information and technology as well as occupational structures on not only an organizational but also individual level. In order to cope with dramatic change, the acquisition of knowledge and practice is no longer limited to formal education. The new concept of learning in a work context has recently been considered essential and also greatly shapes our idea of education. The studies of learning at work began to receive researchers' attention at the beginning of 1990s (Tynjälä, 2008).

In order to gain more insights into learning in the workplace, researchers started to explore the underlying meaning of learning. It has been noted that in order to understand what learning is, researchers are encouraged to 'reach the most fundamental, primary level of their thoughts....and beliefs that guide them. This means digging out the metaphors that underlie both their spontaneous everyday conceptions and scientific theorizing' (Sfard, 1998, p. 4). The power of metaphor has been emphasized because it conveys researchers' intuition in the theorization process which facilitates the

formation of scientific ideas. The idea of metaphors is the fundament of how humans acquire new knowledge by making use of old knowledge (Sfard, 1998).

Two different metaphors of learning were proposed in the late 90s: namely, the *Acquisition Metaphor* and the *Participation Metaphor*, depending on individuals' interpretation of the world (Sfard,1998). Inspired by the earlier work 'The Conduit Metaphor' (Reddy, 1979), the acquisition metaphor views learning as a process of analysis prior to concept development. Knowledge is not seen as a whole but as many small components that can be accumulated, reshaped, combined, and then finally turned into a more advanced concept. The latter, the participation metaphor, states that every learner is unique because every learner has his own particular interest in certain types of activity, rather than simply accumulating non-specific information (Sfard,1998). The participation metaphor implies that learning occurs by practising and interacting in social communities (Tynjälä,2008), which is similar to Community of Practice, which has been documented in the previous section.

In the educational system where students learn through practice, researchers are interested in how students transfer their knowledge and skills from formal education to

practical settings. The literature demonstrated that knowledge learnt from different contexts cannot be easily transferred, meaning students often find themselves struggling to apply what they have learnt in classrooms to a workplace context (Eraut, 2004). Scholars therefore began to consider the fact that learning in the workplace should be separated from formal learning. Given this reason, two learning paradigms, namely the *standard paradigm of learning* and the *emerging paradigm of learning*, were also proposed in order to distinguish learning in a classroom from in a workplace.

The standard paradigm of learning consists of three concepts: focus on mind, interiority, and transparency (Hager, 2004). ‘Focus on mind’ refers to how cognitive processes lead to one’s development of the mind and intelligence so that information can be further processed and accumulated into knowledge. ‘Interiority’ explains the ways in which learning originates from the awareness that there is a difference between our mental life and the outside world; it represents that ‘thinking’ is more valuable as a form of learning than action. For example, learning about socialization cannot happen if a person is unable to distinguish between self and the outside world. In order for learning to be transparent, the outcomes of learning must be measurable (e.g. GPA) through criteria.

In contrast to the standard paradigm which mainly concentrates on cognitive processes, the emerging paradigm is based on human action and an individual's relation with learning contexts, meaning learners accordingly add a series of new actions to the environment; from this a new relation between the learners and the environment is built as a form of knowledge (Hager & Halliday, 2006).

Comparisons between Sfard's metaphors and Hager's view of paradigms were documented by Tynjälä (2008). Some similarities have been identified, such as the idea that the acquisition metaphor is similar to the standard paradigm and the participation metaphor can be categorized together with the emerging paradigm. The mainstream of educational systems mostly follows the acquisition metaphor, even in vocational institutions, which is one possible reason why scholars have encountered difficulties when examining learning progress in the workplace with the principle of the acquisition metaphor. Many researchers echo the view that learning in the workplace should be in an emerging paradigm because learning within a learning workplace has very different features to that of formal educational systems (Billett, 2004; Collin, 2005; Fuller, Hodkinson, Hodkinson, & Unwin, 2005; Hager & Halliday, 2006; Hodkinson & Hodkinson, 2004). The most significant supportive observation is that, at school,

learning happens through a series of intentionally formal educational activities; while, in the workplace, not all learning activities can be planned and they are sometimes unintentional (Eraut, 2004; Marsick & Watkins, 2001).

Resnick (1987) is one of the pioneer researchers who studied learning specifically within a workplace context and proposed four features for learning in the workplace. Firstly, most school activities can be completed individually but outside-school learning mostly requires collaboration with others. For example, nurse learning in classrooms emphasizes individual improvement, although some tasks require a minor level of teamwork; yet it is still far from the collaboration necessary in workplaces. Secondly, learning at school is aimed at exercising the mind and symbol manipulation, while workplace learning involves solving problems with equipment. For instance, in a classroom, nursing students may be asked to calculate how much medication for patients without calculators but calculators are permitted in nursing practice. Thirdly, the principles of knowledge and general skills in schools are generic, whereas knowledge and skills in the workplace are context-specific. Nursing students learn standard instructions of practice for 'ideal situations' but these standard procedures may sometimes be adjusted for patients' conditions in workplaces.

Hager (1998) also elaborated the differences between workplace learning and school learning by suggesting that workplace learning is characterized as informal, implicit, and unplanned. It is often collaborative and highly contextualized with unpredictable outcomes, while school learning is a formal, planned, and explicit process that focuses on individual learning with predictable outcomes. Learning at school or in workplaces has its own advantages and disadvantages. Although schools provide clear principles for general situations, it is not enough in the 'real world' to solve context-specific problems. It is important, however, for learners to comprehend generic knowledge before learning context-specific skills. Researchers have explained that context-specific knowledge and skills can be unsystematic and fragmented, but mastering context-specific knowledge and skills are essential for specialisation (Hager, 1998).

2.5.6. How people learn in workplace?

Although clear learning aims are specifically designed for vocational education, such as general knowledge about the occupation as well as practical skills, theorists are still unclear about the transferability of theory to practical contexts (Eraut, 2009). More specifically, scholars are unable to clarify how much methodological knowledge and generic skills can be learnt in classrooms and then transferred to workplaces (Tynjälä,

2008). A few empirical results echo that the ‘untransferability’ seems a common issue for most university and polytechnic graduates (Stenström, 2006; Tynjälä, Slotte, Nieminen, Lonka, & Olkinuora, 2006). As knowledge is not particularly easy to transfer between contexts, researchers began to investigate how students actually learn at work. This has been summarized in seven different forms: (1) by doing the job itself; (2) by being involved in teamwork with colleagues; (3) by applying knowledge and skills to the clients; (4) by completing new tasks and challenges; (5) by reflecting and self-monitoring one’s own performance; (6) by learning through formal education; (7) by being immersed in work contexts (Billett, Smith, & Barker, 2005; Collin, 2002; Collin & Valleala, 2005 cited in Tynjala, 2008). As mentioned earlier, it has been pointed out that most mainstream vocational education institutions connect training outcomes with transparent assessments, a fundamental component of formal education (Eraut, 2004). Due to the features of implicit and unpredictable outcomes in workplace learning, it is more difficult for learners to be aware of their progress at work when the assessment criteria becomes the primary guide of their learning (Tynjälä, 2008). It should be noted that the learning outcomes are not always desirable because workplace learning is not as predictable as classroom learning and students may observe bad practice from staff, (Tynjälä et al., 2006). Bad practice could influence trainees’ opinions of their progress

and inject doubt into whether the programme is really helpful (Blom, Melin, & Pyöriä, 2001; Poell & Van der Krogt, 2006).

2.5.7. Learning through interaction

Learning in the workplace involves the features of the participation metaphor and the emerging paradigm, learning through interaction with staff and the work environment therefore plays a crucial role in the learning process. Interpersonal interaction in the workplace has been recognised as one of the most efficient ways to exchange and share one's knowledge and expertise in order to achieve desirable learning outcomes at work. The influence of learning is not only limited to personal qualities and intelligence, but also to cultural and social contexts (Tynjälä, 2008). Consequently, researchers are particularly interested in how individuals learn in a social community. The new members firstly start with peripheral, occasional but not necessary engagement, then gradually develop a co-worker strategy by sharing responsibilities and finally being recognised by the community (Lave & Wenger, 1991; Wenger, 1998). Professional nursing can be seen as an example of a community of practice formed by people who engage in a process of collective learning in a shared domain, according to Community of Practice (COP). Wenger (1998) described a community of practice as a joint

enterprise because it is understood and continually renegotiated by its members. In such a setting, learning is mainly based on an interactive process as the community members share mutual engagement and form a social entity and communal resources (e.g. routines, sensibilities, artefacts, vocabulary, style, etc.) that they have developed over time (Wenger, 1998, p. 2).

2.5.8. Nursing students learn through communities of practice

Despite there being a lack of direct research, nursing was included when Lave and Wenger introduced the concept of social learning systems and the framework of community of practice (Berragan, 2011). In relation to the nursing profession, Wenger identified what defines whether a community provides a function of learning (2000); for example, one of the learning aims for nursing students during placements is to know what the communal resources are in the wards. Nursing education involves formal education as well as practical learning. Learning through communities, however, can be challenging. Due to the need to interact with other nurses and the workplace during placements, nursing students sometimes feel their learning in hospitals is unplanned and unpredictable, as noted before (see 2.4.2), which is in line with the literature that

suggests that most learning in nursing practice occurs serendipitously (Wotton & Gonda, 2004).

2.5.8.1. Why do nursing students initiate engagement with the community?

On the basis of a community of practice, learning happens through interaction with others. It is not difficult to explain why nursing students emphasize the importance of being accepted by nurses and being part of the team in their placement experience (Dunn & Hansford, 1997; Jackson & Mannix, 2001; Nolan, 1998; Papp, Markkanen, & Bonsdorff, 2003). Students reported they only learnt the surface of nursing practice if they felt isolated from the team (Nolan, 1998). For nursing students, clinical settings provide an opportunity to learn nursing from the professionals (Jackson & Mannix, 2001) in a real life setting (Elliott, 2002). Clinical placements offer three main learning purposes which can be seen as evidence that nursing education has to be completed through social learning systems. (1) Learning by engaging: One of the main goals of nursing placements is to offer a chance for students to be able to participate and recognise their responsibility in the medical team (Dunn & Hansford, 1997; Jackson & Mannix, 2001) because without engaging with the community, students are unable to fully reflect the complexity of this profession (Edmond, 2001). (2) Developing a

repertoire: Through repeated practice, students observe and learn the ‘hospital way’ that cannot be learnt in a classroom because every ward has its own jargon, routines, and style. (3) Reshaping knowledge: After being immersed in a real life setting, students’ original view of nursing combines with their experience of the environment and staff. This interaction leads to knowledge refinement. In communities of practice, learning also involves the negotiation of new meaning (Wenger, 1998). As mentioned previously, placements provide the chance to learn in a ‘hospital way’ so that students’ generic knowledge acquired from textbooks can be revisited and applied in context-specific situations (Higgs, Titchen, & Neville, 2001). As such, what students have learnt at school is given a new meaning, (Eraut, 1994; Higgs et al., 2001), as the theory communities of practice suggested .

Several studies, however, have identified the risks of learning through communities. Without clear guidance, students might interact with inappropriate nursing practice without realising the mistakes (Edgecombe, Wotton, Gonda, & Mason, 1999); or they may follow the routine without thinking (Wotton & Gonda, 2004). Some students are confused by their role as both students and workers because they feel exploited as workers in hospitals. That often happens when students do not receive enough support, learning opportunities, and constructive interactive processes from the instructors

(Elliott, 2002). Due to the fact that learning at work is not as explicit as learning in a classroom, it can be difficult for students to realize that their daily practices may look like routines when they are in fact learning (Ranse & Grealish, 2007). Since students need to be part of the team, a sense of belonging has been noted for its impact on professional development; however, the researchers found that staff members' unsupportive behaviour makes students feel unwelcome. An unwelcoming workplace can distort students' purpose in pursuing a feeling of inclusion (Jackson & Mannix, 2001) because students may follow the misconduct of nurses in order to gain acceptance from the staff, rather than learning and thinking critically for themselves (Nolan, 1998).

2.5.8.2. How do nursing students initiate engagement with the community?

Given the rapid change in today's clinical workplace, the relation between new nurses and staff is no longer as strict as traditional 'master-apprenticeships', but the support from mentors is still the key to new nurses fitting into the evidence-based practice nowadays (Kelly, 2007). From the protégés' perspective, they look forward to a reciprocal relationship which includes open communication, guidance, and support (White, Brannan, & Wilson, 2010). Alternatively, mentors also seek communication

and connection and share wisdom with their protégés (Eller, Lev, & Feurer, 2014). The detailed relational obligations of protégés and mentors are explained by Haggard and Turban (2012); protégés are aware that they should hold loyalty, respect, friendship, and support towards their mentors and that mentors should be able to offer support in turn to protégé's professional performance and psychological needs (Higgins & Kram, 2001, p. 2268). Due to these 'learner-friendly' changes in the mentor-protégé relationship, today's clinical placements provide more opportunities for students to socialize and familiarize themselves with the staff members they will work with in the future (Atack, Comacu, Kenny, LaBelle, & Miller, 2000).

One of the reasons for the changing dynamics between mentors and protégés is alterations in workplaces. Organizations nowadays value the employees who can fit into a company by learning quickly (McCauley & Young, 1993) and knowing how to learn (Hall, 1986). The same situation can be found in clinical settings. Hospitals expect newly graduated nurses to be able to 'hit the ground running' (Greenwood, 2000, p. 1) so new nurses need to familiarise themselves with the relevant knowledge and skills and be ready to work independently as soon as possible. Such demands consequently alter nursing mentorship and catch nursing scholars' attention (Cowin & Hengstberger-Sims, 2006). In order to be effective learners, new nurses want to learn professional

skills from the senior nurses because they are the most experienced, but on the other hand, when it comes to updated medical knowledge or the use of the latest technology, new nurses may turn to less senior nurses who may be less experienced but more informative in relation to the latest knowledge. Similarly, in nursing placements, the clinical instructors, normally designated by schools, teach students the standard methods of nursing practice, but they may not be able to provide the ‘hospital way’ and the latest knowledge as staff do, those who have been working in real clinical settings for a long time. In this case, the title ‘teacher’ is not guaranteed to be the best learning source. As researchers suggested, nowadays seniority does not have the absolute value in an organisation; instead, the ability to acquire the most recent knowledge and skills is most valued (Mohrman, Cohen, & Morhman Jr, 1995). The trainees therefore realize the necessity of being flexible to learn from different people in order to perform better (Perlow, 1999). This can be one of the explanations for students’ motivation to outreach their relationships with staff during placements.

In short, in order to learn and fit in quickly, trainees must start to explore and optimize the mentor-protégé relation from their first day in workplaces so that the forms and features of their relations change over time. Higgins and Kram (2001) conceptualize a network entailing the typology and the mechanism of mentor-protégé relations. They

propose four types of relation, namely, receptive, traditional, opportunistic, and entrepreneurial model (see figure 2.4). In clinical learning contexts, the common types are receptive and traditional models so the following paragraphs focus on these two types.

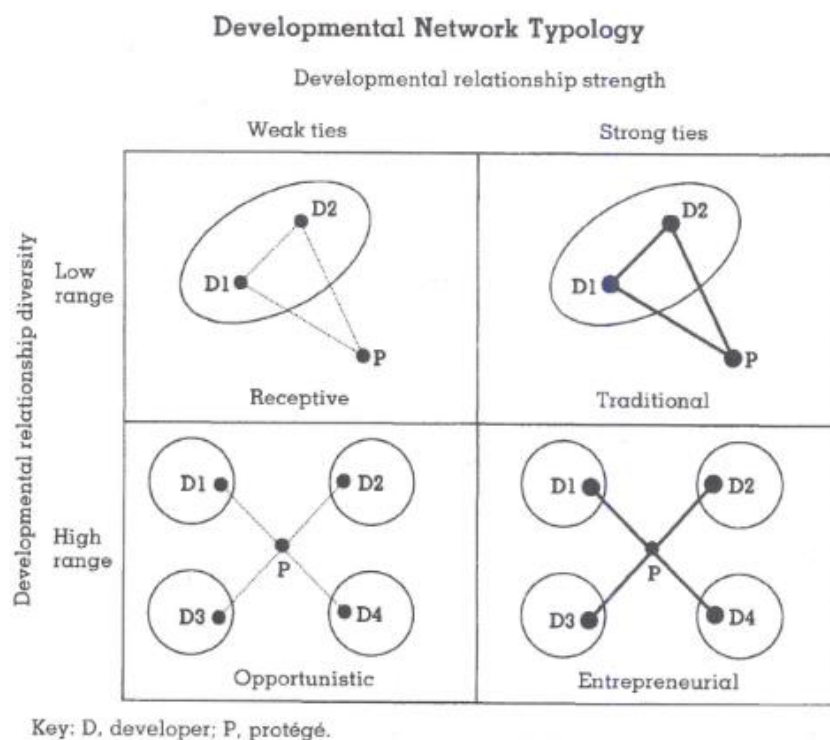


Figure 2.5 Mentor-Portege Network by Higgins and Kram(2001)

2.5.8.3. *Receptive Developmental Network*

At the beginning of clinical placements, students enter the workplace as outsiders. They are not familiar with the teachers assigned by their school or the staff in the ward. At

this stage, the mentor-protégé relationship is likely to be receptive. Without having shared information with this professional community, students receive what they are told, rather than interacting with the teachers and staff as equals. According to Higgins and Kram (2001), the term ‘receptive’ clarifies that protégés are open to receive information from the mentors, but are not necessarily able to actively develop a mutual relationship with them so the strength of the connection among trainees and mentors is relatively weak. The diversity of mentors is limited to one main mentor and another whose role is more tentative. The literature also noted that the strength of tie between two mentors has some influence, too. If the two mentors have already known each other and maintain a strong bond, their protégé would benefit by receiving consistent advice and value within the profession. On the other hand, if the tie between two mentors is weak the consistency that trainees receive for learning could be compromised, according to Higgins and Kram (2001).

2.5.8.4. Traditional Developmental Network

Similar to the receptive mode, a low range diversity of support from two mentors can be expected in a traditional developmental model, but the strength of tie is found to be stronger between mentors and protégés in a traditional developmental model than in a

receptive model. It has been observed that, when the mentor-protégé relation is stronger, trainees are not the only person who benefit from the relation; the mentors also gain advantages (see 5.6 for the benefits of teaching trainees). The traditional model leads to organization commitment, which depends on how much the employees agree with the principles, values, and goals of that specific organization. Most importantly, the employees' commitment is a crucial factor for staff retention (Higgins & Kram,2001). In most cases, there is one primary mentor who is able to provide professional development and psychosocial needs to their protégés (Higgins & Kram,2001). As previously mentioned, if the mentors already share a bond, the information from both mentors would be consistent and beneficial for trainees' learning, which associates learners help-seeking and feedback-seeking behaviours (Higgins & Kram,2001).

2.5.8.5. Factors for the change in mentor-protégé relations

At the beginning of nursing placements, the receptive model in mentor-protégé relation is likely to see; this model refers that student only receive information with mutual interaction with mentors. However receptive model can change to the traditional model in the later stage, where both mentors and trainees develop a connection based on an

interactive model. At the beginning of placements, students have more contacts with the clinical teachers, who are assigned by schools. The tie between students and teachers intensifies at this stage. This is the point at which the receptive model gradually transforms to a traditional model between students and teacher. The transformation between students and staff normally happens later. After gaining more information about the staff and the working environment, according to the communities of practice theory cultivated (Wenger, 2000), nursing students begin to reach out in order to develop relationships with staff members so they can learn more effectively. One possible way to accelerate the connection between students and staff in the Taiwanese placement context is due to the imbalanced teacher-student ratios for placement programmes so students need to seek alternative learning resource, staff. Empirical studies revealed that there is a gap between learners' expectations and their actual experiences during placements. The trainees expected more clear instructions and organised learning procedures; however, this seemed difficult to achieve in reality in placement learning in Taiwan (Chan, 2002). A teacher-student ratio of 1:8 has been suggested as the ideal distribution for learning settings (Greenwood, 1995); however, in Taiwan, ratios varies between 1:8 to 1:10 (Hsu, 2006). Students reported that sometimes they have to 'chase' the teacher in order to ask questions (Andrews et al.,

2006, p. 868). Under such circumstances, staff members become important resources thereby motivating students to bond with staff nurses. In addition to imbalanced teacher-student ratios, the theory-practice gap is another mediator that can promote students' connection with staff. The theory-practice gap is defined as a discrepancy between what students are taught in the classroom and what they actually experience in placements (Jones & Johnston, 1997; Khatib & Ford, 1998). In schools, nursing students learn generic knowledge and basic nursing skills, but in reality, patients' conditions cannot always be solved by such a generic approach so students often find it difficult to apply what they have learnt at school. Nursing students found the most effective method was to fill in the theory-practice gap is to learn from the staff, especially when a clinical teacher is not available (Dee & Stanley, 2005; Lathey & Hodge, 2001). In short, seeking support and filling in the theory-practice gap are the two main strategies students adopt in order to maintain an awareness of the necessity of interaction with nurse staff.

2.6. Achievement goals and social interaction in workplace

A systematic review detailed that staff relationships are one of the students' primary stress sources during placements because they often experience tense relations and

frustration when communicating with staff (Chan, So, & Fong, 2009; Jimenez, Navia-Osorio, & Diaz, 2010; Suresh, Matthews, & Coyne, 2013), which have been proved problematic for nursing recruitment (Cowin et al., 2008). Nevertheless, certain studies also show that some students have had the opposite experience with staff because they reported pleasant student-staff relations and felt positive when communicating with co-workers and patients (Bray & Nettleton, 2007; Lamont, Brunero, & Woods, 2014; Webb & Shakespeare, 2008). The investigation into negative student and staff interaction mostly focuses on the hierarchical structure of the medical setting (Cowin & Eagar, 2013) and nurses and students' attitudes toward the student-staff relation (Aghamohammadi-Kalkhoran, Karimollahi, & Abdi, 2011; Anthony & Yastik, 2011); however, little research has been done from the perspective of students' achievement goals and its influence on social interaction.

In addition to the impact on education, there is also a growing section of literature discussing how achievement goals influence engagement and cooperation behaviour. Due to one of the essential differences in achievement goals, intrapersonal or interpersonal comparisons (see 2.2.2 and 2.2.3 for the mastery and performance goal), it is logical to see strong social effects from an achievement goals perspective (Poortvliet & Darnon, 2010). The more recent achievement goals literature focuses on

its effects in a workplace context (Janssen & Van Yperen, 2004). Relevant research topics include the influence of achievement goals on employees' feedback-seeking behaviours (Gong, Wang, Huang, & Cheung, 2014), leader-member exchange (Janssen & Van Yperen, 2004), team performance (Pieterse, Van Knippenberg, & van Ginkel, 2011), social support and work engagement (Adriaenssens, De Gucht, & Maes, 2014), social-cognitive conflict regulation (Darnon, Muller, Schrager, Pannuzzo, & Butera, 2006), knowledge sharing (Matzler & Mueller, 2011), and the relation between performance goals and unwillingness to exchange information (Poortvliet, Janssen, Van Yperen, & Van de Vliert, 2009). In a broad view, social interactions refer to particular forms of externalities, in which the actions of a reference group affect an individual's preferences. The reference group is typically an individual's family, neighbours, friends, or peers, depending on the context. Social interactions are sometimes called non-market interactions to emphasize the fact that these interactions are not regulated by a price mechanism (Scheinkman, 2008, p. 2). In this thesis, the term 'social interaction' specifically indicates staff relations between trainees and nurses in a learning context. According to Cowin (2001), staff relations are characterized as whether or not the individuals are able to develop and remain relations with colleagues, which also include nurses' perception of sense of belongingness within

their professional team, are happy to be part of it, and are encouraged or inspired by other members and therefore associate with peers.

The literature demonstrates various outcomes regarding interpersonal relations depending on different goal adoption. This is relevant in relation to whom an individual compares themselves with: either a previous performance or other people. Based on achievement goal theory, the individuals with mastery goal compare themselves with their own past performance or purely focus on completing the task in hand, while people with performance goal pursuits outperform and achieve normative criteria. Based on the characteristics of these goals, it is plausible to observe how achievement goals influence human social interaction. A few empirical studies revealed that achievement goals predict differences in the regulation of task-related conflicts; for instance, people with mastery goals are more likely to see others as sources of help, while people with the performance goal tend to alternatively see others as threats due to their more prevalent intention to compare themselves with others (Darnon et al., 2006; Poortvliet & Darnon, 2010). These theorists explained that employees who obtain the mastery goal expect to bolster their self-improvement and to gain skill mastery. They are keen to seek advice from others because the advice from supervisors or peers is a valuable source of knowledge, information, and experience. Such people can learn more

strategies that suit their own job expectancy through communication with others. In contrast, employees with performance goals aim to demonstrate competence and superiority which turns others' advice into a threat. In this case, taking suggestions from others becomes an obstacle for pursuing their aim, which is the demonstration of competence. Researchers found out that employees with the performance goal limit their contact with supervisors and only maintains the necessary economic exchange behaviours in order to prevent self-perceived inferiority (Janssen & Van Yperen, 2004, p. 372).

2.6.1. Achievement goals and conflict and cooperation

Following the evidence showing the influence of achievement goals on social interaction in the workplace, researchers have further explored how goals influence people's responses to conflicts and their attitudes towards cooperation. Conflicts and cooperation are inevitable in our lives: at school, in professional organizations, and even at home. One cannot avoid cooperating with others. When cooperating with others, it is very common for people to come up with different solutions to the same problem and this is when people find it difficult to agree with others (Sommet et al., 2014). From the perspective of organizational achievement goals, researchers have identified two types of conflict with different focuses when people are in

disagreement. *Epistemic conflict* means individuals focus on the task itself and on understanding the source of the problem, while *Relational conflict* involves emphasising social comparison and demonstration of competence (Butera & Mugny, 2001; Darnon et al., 2006). It has been shown that the epistemic conflict is more beneficial in the problem solving process than that of relation conflict (Mugny, De Paolis, & Carugati, 1984). The disagreement among mastery oriented individuals tend to produce epistemic conflict (Mugny et al., 1984) and they are also more willing to cooperate with their peers and to ask for help (Levy, Kaplan, & Patrick, 2004). Theorists explained that, due to the positive link with the deep process of learning and better understanding of materials, mastery-oriented individuals tend not only to focus on the source of the problem and on finding a solution; more importantly, they can willingly recognise a partner's contribution and competence (Darnon et al., 2006). In contrast, the performance goal has been suggested as an antecedent of relational conflict because this conflict is not only about the disagreement on a matter, but also about proving who is right or wrong (Darnon et al., 2006); meanwhile, their willingness for cooperation is not as high in people with the mastery goal (Karabenick, 2001).

2.7. Summary

The importance of achievement goal theory and nurses' self-concept has been introduced through an historical overview and existing research findings based on Elliot and McGregor's 2 x 2 achievement goals framework (2001) and Cowin's nurses' self-concept (2001). The achievement goals represent different ways of perceiving tasks, so by studying whether placements alter nursing students' achievement goals, more cognitive and emotional support can be given in order to prevent students from switching goals to the avoidance distinction. As for nurses' self-concept, it has been proven that placement experience plays a crucial role in its development, thereby greatly influencing the nursing shortage problem because nurses' self-concept refers to the ways in which nurses feel confident about their role and the level of satisfaction in their job. In order to discover how the shortage problem emerged, researchers need to investigate nurses when they are still in nursing school. Given that nursing students often experience tense relation with staff, the investigation on whether or not students' achievement goals influence their interpersonal relations help nursing research gain more insight regarding what might improve or deteriorate student-staff relation.

Chapter 3 Methodology

3.1. Introduction

The aims of this study were to investigate the effects of clinical placements on nursing students' self-concepts and achievement goals; and to examine the relations between the mastery goal and the self-concept of staff relations. Moreover, whether the mastery approach goal predicts students' self-concept of staff relations is also of interests. Although the mastery goal has proven to be associated with interpersonal relations in workplaces, the same effect on trainees still remains unknown. Three research questions are proposed based on the aims of this research:

Research Question 1: How does the first time clinical placement affect Taiwanese students' achievement goals in their nursing module?

Hypothesis 0: The clinical placement makes no significant difference in achievement goals between the two group

Hypothesis 1: The clinical placement causes significant difference in achievement goals between the two groups

Research Question 2: How does the first time clinical placement affect Taiwanese student nurses' self-concept (NSCQ)?

Hypothesis 0: The clinical placement makes no significant difference in nurses' self-concept between the two groups

Hypothesis 1: The clinical placement makes significant difference in nurses' self-concept between the two groups

Research Question 3: Whether or not the mastery approach goal predicts students' self-

concept of staff relations?

Hypothesis 0: there is no significant difference between the control and experimental groups regarding how much mastery approach goal is able to predict self-concept of staff relations.

Hypothesis 1: there is a significant difference between the control and experimental groups regarding how much mastery approach goal is able to predict self-concept of staff relations.

This chapter outlines the reasons for choosing quantitative research methods for this study. It provides details of the participants and the different variables. A justification for the selection and use of each instrument is given in relation to the research methods literature and research relating to achievement goal theory and self-concept. The chapter begins with an introduction of Taiwanese nursing education and placement then provides a clear outline of the research design and procedures for data collection and analysis. Finally, the statistical analysis employed is described regarding its purposes for the research questions in this study.

3.2. Taiwanese nursing education and clinical placements

Junior nursing colleges in Taiwan require five years of study in order for students to be awarded a nursing diploma if they meet the criteria. The curriculum includes non-professional modules (e.g. English, Chinese, and History) and professional modules (e.g. Basic nursing skills, Pediatric nursing, and Maternal-new born nursing). The assessment includes paper-pen tests and nursing skills demonstration.

After passing the assessment of knowledge and nursing skills at school, from the second year of the programme, students undertake different placements for four weeks every year until their 4th year is completed. Each year, they rotate among different specialty wards, such as the Basic nursing practice for the second year students; Medical Surgical nursing practice for the third year students; Maternal-new born, Psychiatric Nursing, and Public Health for the fourth students. A group of eight to ten students is led by one clinical teacher assigned by the specific school. During these placements, students are expected to demonstrate nursing practices under the supervision of teachers. By the fifth year, each student is allocated to one specific ward and instructed by a senior staff nurse for two months. They are expected to practise nursing more independently at this stage.

The current thesis focuses on students during their first placement, namely Basic Nursing Practice. The eight learning aims for this specific placement will be introduced here (see table 3.1): (1) critical thinking and reasoning skills refer if students are able to discover both patients' physical and psychological needs and if they can further develop their critical thinking skills, meaning students know the application of knowledge to real situation to process information, solve problem and make decision

(Pitt, Powis, Levett-Jones, & Hunter, 2015); (2) general clinical skills emphasise the demonstration of professional competence; these skills include showing good practice, understanding doctors' orders, and writing accurate nursing records of patients' condition and treatment; (3) basic biomedical science knowledge evaluates students' ability to gather patients' biological condition, so they can provide nursing practice and help patients use facilities accordingly; (4) communication and teamwork indicate whether students can effectively interact and exchange information with patients and families and recognize their role as nursing students in the medical team, while also participating in nursing volunteering programmes; (5) caring ensures that, when demonstrating nursing practice, students provide a patient focused approach, meaning taking care of patients holistically is more important than completing nursing tasks; (6) ethics refer to whether students are able to critically justify their practice with the principle of a patient centred approach and to identify their role as nursing students and make contributions to their team; (7) accountability assesses whether students are responsible in terms of providing patients with safe nursing practice and fully adopting their role in the medical team; (8) life-long learning evaluates whether students are aware of their role in the team in order to understand that learning is not limited to the classroom, but that it also occurs in the workplace and everyday life.

Table 3.1 Learning Outcomes in Clinical Placements in the Basic Nursing Placement by Taiwan Nursing Accreditation Council (TNAC)

Learning Aims	Learning Outcomes
Critical thinking & reasoning	<ol style="list-style-type: none"> 1. Evaluate and collect information regarding the patients' physical needs. 2. Discover and understand patients' health-related psychological, social, and spiritual needs. 3. Apply critical thinking skills during the nursing practice.
General clinical skills	<ol style="list-style-type: none"> 4. Appropriately demonstrate nursing skills and the use of common facilities under supervision. 5. Accurately understand medical orders and practise nursing care accordingly. 6. Accurately record the nursing practice and patients' conditions in written forms.
Basic biomedical science knowledge	<ol style="list-style-type: none"> 7. Evaluate and collect information regarding the patients' physical needs. 8. Appropriately demonstrate nursing skills and the use of common facilities under supervision.
Communication & teamwork capability	<ol style="list-style-type: none"> 9. Apply observation and communication skills to develop a rapport with the patient and the family. 10. Identify nursing students' role and function in a clinical team. 11. Be involved in the nursing volunteer program and value the service in order to develop one's care and adaptability in the placement.

Caring	<ul style="list-style-type: none">12. With patient-centred approach, provide a comfortable and safe environment for patients.13. Apply observation and communication skills to develop a rapport with the patient and the family.14. Appropriately demonstrate nursing skills and the use of common facilities under supervision.15. Be involved in the nursing volunteer program and value the service in order to develop one's care and adaptability in the placement.
Ethics	<ul style="list-style-type: none">16. Apply critical thinking skills during the nursing practice.17. Identify nursing students' role and function in a clinical team.
Accountability	<ul style="list-style-type: none">18. With a patient-centred approach, provide a comfortable and safe environment for patients.19. Identify nursing students' role and function in a clinical team.
Life-long learning	<ul style="list-style-type: none">20. Identify nursing students' role and function in a clinical team.

3.3. How students are assessed in nursing placements?

According to the learning outcomes in clinical placements (see table 3.1), nursing students are evaluated based on three different tasks:

1. Clinical performance 70% (10% from the ward and 60% from the clinical teacher)

After being assigned to a ward, students are evaluated by their nursing skills and performance when giving nursing intervention. The teachers are given an inventory that lists the nursing skills students need to do at bedside so teachers can record how

times they have done these skills. There are 43 skills on the list for students in first placement, such as taking vital signs (body temperature, pulse rate, respiration rate, and blood pressure), intramuscular injection, enema to change intravenous bottle and its needle set. Depending patients' need, nursing students may have more practice on certain skills than others. Students need to performance at least once on those skills and the teacher evaluate how well he/she can do.

2. Assignments 20%

Students have four assignments to complete during this placement: portfolio 2% (2 learning journal), an analysis of interview with patients or patient's family 3%, making medication index card 3%, case study 10%.

Portfolio: students are given self-assessed check list that contains items from Learning Outcomes in Nursing Placements (table 3.1). Students complete the self-evaluation in the middle and the end of the placements. They are also required to reflect their learning journey by answering some questions, such as sharing what the differences on nursing skills are between what students have learnt at school and what they actually do at bedside; or share their the most exciting and most upsetting experience in this placement.

Interview: the aim of interview is to provide nursing students an opportunity to improve communication and analytic skills by contacting patients and their family. Students record the interviewee's verbal and non-verbal response. The analysis of the content focuses on the use of nurse-patients communication skills and identify patient's physical and spiritual need or any other issues emerged from the conversation. Additionally, students also reflect the pros and cons of their communication skills. This assignment is graded by the following criteria: the content meets the purpose and health related, open questions applied, record verbal and non-verbal response, students' analysis is theoretically based.

Drug index card: it is necessary for nursing students to make drug index card for every drug their patient is taking. The medication index cards contain the following information: the drug action, use, adverse effects, contraindications, nursing interventions, interaction, route and dosages.

Case study: students are required to collect one patient's personal and medical information (e.g. diagnosis and operation), also the information about before and after the patient were admitted into hospital. Most importantly, in this assignment, students have to make their own medical decision and identify patient's health issues by integrating theory and the objective and subjective data from the patient, family and

medical chart. The grading criteria include (1) accurate record of patient's information and why and how he is admitted; (2) whether how patient and his family feel (e.g. what kind of pain when it happened, what did they do) can be accurately presented in a timely manner; (3) whether the laboratory results are recorded objectively and keep them updated; (4) whether or not students are able to accurately analyse patient's health issue and the causes for such issue.

3. Paper-pen test 10%

The test covers translation of medical order, the use of abbreviation, diagnosis and understanding of drug use.

3.4. The participants and the control and experimental group design

The 276 participants, aged 17-18, for this study were in their first or second year in their five year nursing programme (see table 3.2 for the return rate and number of the participants for three different time frames). In Taiwan, the first year nursing students are not involved in clinical practice, as placements begin in their second year after they have acquired the basic nursing skills and knowledge at school. Before the first clinical placement starts, in a twenty week term, students spend eighty in-class hours and eighty simulation-class hours learning

generic knowledge and standard skills for the future placements. The second year students go to the hospital and start their first time placement after they meet the requirements for basic nursing skills.

In this research, since the first year students did not go on placement, they were allocated into the control group while the second year students went to a 4-week placement during the research period so they were in the experimental group. None of the participants had any prior clinical experience before this research began. There are a limited number of teaching hospitals in Taiwan and so, nursing students have to take turns going on their placements. The participants were recruited from two nursing colleges which are geographically close to each other and the students had equivalent entry qualifications and placings with the rankings, which is able to ensure that the participants were as similar to one another as possible. . Differences in teaching styles and ward culture might influence the results; however, these issues are not the focus of this research. Still, they offered a potential direction for further studies.

The learning aims for students who are about the undertake placement is different from those who are not going till next term. Naturally, before the placement, the experimental

group are given more practice in stimulation room and materials focus on skills improvement and case study. Alternatively, the materials for the control group are still emphasising the understanding the theory. Such difference could bring students different ideas about placement. For example, the experimental group students would realize the complexity of work, which could undermine their nursing confidence, at the same time, the pressure of real workplace also makes them realise the importance of finding more source to help them become efficient learners (e.g. nurses in the ward are important source for students); other the hand, the control group students would not have the same awareness of the pressure and anxiety.

3.5. Sample size and the attrition rate

The participants were recruited based on a random cluster sampling. In this case, the researcher sent out the recruitment advertisement to the classes, rather than to individuals, which means the participants have some degree of homogeneity. The researcher firstly provided school administrators with the research proposal and necessary sample size. Classes that were not involved with another research project were assigned to the researcher. 276 of 350 (79%) nursing students acquired parental consent and agreed to participate in this study. The students who went to placements before the T2 test were designated to the experimental group (n=140);

and those who did not have placements until the next term were placed in the control group (n=136). The mean age of participants was 16.5; 98% of the participants were female and 2% were male (n = 5). An adequate sample size is particularly vital for quantitative research. Empirical data that are derived from inadequate samples are unable to achieve satisfactory statistical power (Field, 2013); poor statistical power directly compromises the validity of research results and conclusions. The software G*Power 3 was therefore applied to calculate an adequate sample size. As suggested by the relevant literature, a medium effect size ($r = .3$) is consider valid (Coe, 2002), and the desired statistical power .8. G* Power revealed that 200 participants would be required to reach the medium effect size and power as stated above. The 276 participants were recruited, thereby ensured this study was adequately powered.

The control group's return rate in the three surveys was 100%, 87%, and 86% respectively. The experimental group's return rate was 100%, 77%, and 69 % respectively. There was 13-14% attrition rate in the control group and 23-31 % in the experimental group.

Table 3-2 Number of participants and attrition rate

Different time points and imputation	Experimental group (number of participants / attrition rate)	Control group (number of participants / attrition rate)
--------------------------------------	--------------------------------------------------------------	---------------------------------------------------------

T1	136/100%	140/100%
T2	104/23%	122/13%
T3	94/31%	120/14%
After imputation	136/100%	140/100%

3.6. Instrumentation

Two questionnaires were used for this study; one was the Achievement Goal Questionnaire (AGQ) (Elliot & McGregor, 2001b), and the other was Nurses' Self-Concept Questionnaire (NSCQ) (Cowin, 2001). Although the Achievement Goal Questionnaire has been translated into Chinese in Taiwan (Shih, 2008) and Hong Kong (Lau & Lee, 2008), as has the Nurses' Self-Concept (Cao et al., 2012), the Achievement Goal Questionnaire has never been applied to nursing students and the Nurses' Self-Concept Questionnaire has not been studied at a college level. The reliability and validity of these two questionnaires were further investigated to ensure the Chinese version questionnaires are suitable to apply in the current research setting for the valid results in order to answer the research questions.

3.6.1 Achievement goal questionnaire

The 12-item Achievement Goal Questionnaire is based on the 2x2 framework proposed by Elliot and McGregor (2001). The purpose of the questionnaire is to investigate the achievement goals that have been categorized into the mastery and performance goals; each goal is then subdivided by the approach-avoidance distinction. These subcategorises are performance approach and performance avoidance, and mastery approach and mastery avoidance. Each goal contains three statements to which participants respond with how much they agree with that particular statement, ranging from 1 “not true of me” to 7 “very true of me”. The explanation of each goal and its statements can be seen in table 3.3.

Table 3-3 Summary of Achievement Goal Questionnaire

Subscale	Description of scale and item wording
Performance Approach Goal	Strive to outperform or meet the normative criteria
	1. It is important for me to do better than other students. 2. It is important for me to do well compared to others in this class. 3. My goal in this class is to get a better grade than most of the other students.
Mastery Avoidance Goal	Avoid missing a change to understand and master a task

<ol style="list-style-type: none"> 1. I worry that I may not learn all that I possibly could in this class. 2. Sometimes I am afraid that I may not understand the content of this class as thoroughly as I'd like. 3. I am often concerned that I may not learn all that there is to learn in this class. 	
Mastery Approach Goal	Strive to understand and master a task
<ol style="list-style-type: none"> 1. I want to learn as much as possible from this class. 2. It is important for me to understand the content of this course as thoroughly as possible. 3. I desire to completely master the material presented in this class. 	
Performance Avoidance Goal	Avoid showing poor ability
<ol style="list-style-type: none"> 1. I just want to avoid doing poorly in this class. 2. My goal in this class is to avoid performing poorly. 3. My fear of performing poorly in this class is often what motivates me. 	

(Elliot & McGregor, 2001)

Despite the fact that researchers within the field of psychology have examined the Achievement Goal Questionnaire, a few problems have been identified. For example, the fact that AGQ the goal assessment has mixed goal investigation in conjunction with motivation can be problematic (Elliot & Murayama, 2008) because some items include the emphasis on emotion such as fear. On the basis of the 2x2 framework, goals are conceptualized as aims, which are in turn viewed as separate ideas to an individual's reasons (motivation) for pursuing an aim (Elliot & Thrash, 2001). It is therefore vital to separate goals and the reason behind the goals in the assessment. Nevertheless, it has been pointed out that, in AGQ, one item in performance avoidance combines the assessment of goal adoption with an underlying motive, the fear of failure: 'My fear of performing poorly in this class is often what motivates me.' Such a description leads

the participants to focus more on the motive than the performance avoidance goal (Elliot & Murayama, 2008, p. 615). In addition, another potential problem is that an item in the performance approach goal seems to include both performance and mastery goal concepts: 'My goal is to get a better grade than most of the other students'. Depending on the nature of the evaluation is, either this evaluation is task-based or normative; accordingly, the word 'grades' can be referred to either mastery-based or performance-based goals (Elliot & Murayama, 2008). In a similar way, Elliot and Murayama have pointed out that some underlying meanings of the mastery approach goal might also be interpreted as relevant features of the performance goal, such as the mastery approach goal's relation to people's hard work (Duda & Nicholls, 1992) and perseverance (Roedel, Schraw, & Plake, 1994).

In order to remedy the issue mentioned above, Achievement Goal Questionnaire-Revised has been developed by Elliot and Murayama (2008). Nevertheless, they admitted it is not a final or definitive assessment (p.625) because it is not flawless and there are still certain problems that need to be considered, for example, Elliot noted that mastery-based goal can have two focuses, whether to use task-based or intrapersonal standard to define success; however, the AGQ-R is 'somewhat ambiguous on this issue' (Elliot and Murayama, 2008, p.625). In addition, most of existing research still uses the original AGQ (Elliot & McGregor, 2001b), which also indicates adequate and rich literature support. The current research used the original version of the Achievement

Goal Questionnaire because (1) AGQ-R has not been widely applied in Chinese learning context; (2) AGQ has been studied in conjunction with multidimensional self-concept (academic self-concept by Marsh, 1990) (Murayama & Elliot, 2009). The framework of NSCQ is also based on a multidimensional construct, which is Self-Descriptive Questionnaire (SDQ) by Marsh, 1988. In short, from the previous studies, the fundamental aspects of the NSCQ and AGQ are theoretically related to each other. The use of the original version is therefore more suitable than the revised version.

In previous studies of achievement goals, theorists developed various instruments for goals investigation. In addition to the aforementioned Achievement Goal Questionnaire (AGQ), the Patterns of Adaptive Learning Survey (PALS) (Midgley et al., 1996) is also a reliable and popular instrument (Kaplan & Maehr, 1999). Hulleman, Schrager, Bodmann, and Harackiewicz (2010) noted that what delineates the two instruments are the different opinions regarding whether performance approach goals can be helpful to learning. Those theorists who see the positive effects of performance approach goals and multiple goal adoption tend to apply AGQ and those who disagree with the benefits of performance goals usually choose PALS as the instrument for data collection. There is a growing body of achievement goals literature in Taiwan suggesting that a multiple goal perspective may be the most applicable to the Taiwanese educational

context, as multiple goals adoption is often detected among Taiwanese students (Lau & Lee, 2008; Shih, 2008). Two reasons are raised here for the justification of the use of AGQ in the current study: AGQ focuses on the performance goal structure (e.g. ‘My goal in this class is to do better than others’); and advocates the benefits of performance goals with a multiple goal perspective. Several studies in Taiwan demonstrate that a performance approach also leads to adaptive behaviours and high-achieving students are able to shift successfully between mastery and performance goals according to the specific situation for their interests. On the other hand, the PALS emphasises self-presentation with a mastery goal perspective and excludes the possible beneficial outcomes of performance goals. This makes PALS less suitable to the classrooms in Taiwan. The author of this thesis would like to expand the research context to include clinical learning environments. Although the Achievement Goal Questionnaire had been broadly applied and proved reliable and valid via solid factor analyses and reliability test (Barron & Harackiewicz, 2001), the existing achievement goals literature is mostly derived from undergraduate students who have a psychology major (Hulleman et al., 2010; Midgley, Kaplan, & Middleton, 2001). In this study, and through the tests of reliability and validity, the use of AGQ is able to be validated and applied to medical education in Taiwan.

3.6.2 Nurses' Self-Concept Questionnaire

Another focus of this study is the assessment of student nurses' self-concept through Cowin's (2001) Nurses' Self-Concept Questionnaire (NSCQ). This instrument's design is based on today's clinical environments and includes five subscales: nurse general self-concept; care; staff relations; communication; and knowledge and leadership. The definition for each subscales and its statement can be seen in table 3.4. Yet the last construct, leadership, is excluded from this research because the participants in this study are novices and leading a team is not included in their placement learning aims. They are rarely given opportunities to demonstrate leadership during placements. After consulting with the author of NSCQ, Dr. Cowin, this research therefore excluded the assessment of students' self-concept of leadership.

Table 3.4 Summary of the Nurses' Self-Concept Scale

Subscale	Description of scale and item wording
Nurse General Self-Concept	Respondent perceptions of their self-confidence and positive self-feelings regarding their nursing abilities and in general.
<ol style="list-style-type: none">1. I get a lot of enjoyment out of being a nurse.2. Being a nurse gives me great enjoyment.3. I like being a nurse.4. I am proud to be a nurse.5. I am enthusiastic about nursing.6. My work as a nurse is very interesting.	

Caring Self-Concept	Respondent perceptions of their self-confidence in providing a sense of concern, interest, and empathy in the welfare of others.
<ol style="list-style-type: none"> 1. I am interested in caring for my patients. 2. I look forward to caring for my patients. 3. I am proud of my ability to care for patients. 4. I have the ability to care for my patients' needs. 5. Taking care of patients is easy for me. 6. I am confident about my ability to care for patients. 	
Staff Relation Self-Concept	Respondent perceptions of their self-confidence in developing and maintaining relationships with other staff.
<ol style="list-style-type: none"> 1. I enjoy working with other health professionals. 2. I gain a lot of professional pleasure from my relationships with colleagues. 3. I can easily relate to my colleagues. 4. I get along well with other health professionals. 5. I have a good working relationship with other health professionals. 6. I am able to form good working relationships with other health professionals. 	
Communication Self-Concept	Respondent perceptions of their ability to communicate with health professionals and patients.
<ol style="list-style-type: none"> 1. I enjoy communicating information and ideas with colleagues and patients. 2. I can confidently communicate with patients and colleagues. 3. I am good at verbally communicating with colleagues and patients. 4. Communicating effectively with patients and colleagues is easy for me. 5. I have the ability to communicate effectively with patients and colleagues. 6. I am good at communicating with colleagues and patients 	
Knowledge Self-concept	Respondent perceptions of their self-confidence and abilities in learning and using nursing knowledge.

<ol style="list-style-type: none"> 1. I look forward to taking further courses that improve my nursing knowledge. 2. I am respected as a nurse because of my nursing knowledge. 3. I find new nursing knowledge stimulating. 4. I am able to master new nursing knowledge. 5. I am constantly incorporating new nursing knowledge into my patient care. 6. I enjoy learning new nursing knowledge. 	
<p>Leadership</p> <p>Self-concept</p>	<p>Respondent perceptions of their self-confidence and abilities to participate in the role of leadership for nursing teams.</p>
<ol style="list-style-type: none"> 1. I get a lot of respect for my leadership skills. 2. I enjoy having nursing leadership responsibility. 3. Good nursing leadership is easy for me. 4. I am recognized as a leader of the nursing team. 5. I can keep a nursing group together as a team. 6. I confidently approach nursing leadership tasks. 	

(Cowin, 2001)

Other nurses' self-concept instruments have also been developed: (1) Nurse's Self-Description Form (NSDF) by Dagenais & Eleis (1982); (2) the Porter Nursing Image Scale (PNIS) by Porter and Porter (1991); (3) the Professional Self-Concept of Nurses Instrument (PSNI) by Arthur, Sohng, Noh, and Kim (1995); (4) the Belgian Professional Self-Image Instrument for Hospital Nurses (BPSII-HN) by Siebens et al. (2006). It was found, however, that most of these questionnaires are not compatible to today's clinical settings. Cao et al. (2012) documented that, for example, the NSDF was originally designed for assessing astronauts' self-concept, meaning its validity could be problematic; PNIS does not include nurses' leadership self-concept assessment which

is considered as an important character for nurses; PSNI has unsatisfactory Cronbach's α (lower than .4) for its communication subscale, which implies poor reliability when assessing communication; BPSII-HN is a comprehensive questionnaire, but includes 279 items, which makes completion too time-consuming. Although Arthur's PSCNI does not have satisfactory reliability in communication items, it is still the first instrument comprised of multiple dimensions of nurses' self-concept: skill, leadership, flexibility, satisfaction and communication. It is also the first large scale experiment in international nursing context (Arthur et al., 1999). Arthur and colleagues admitted (1999) that the reliability of the communication subscale needs to be improved and there is a need to develop a new instruments that fits today's clinical working environment because nurses' identity nowadays is not as same as before.

Arthur's PSCNI and Cowin's NSCQ could be the two most common nurses' self-concept questionnaires according to the frequency with which they have been applied for data collection (Arthur & Randle, 2007); notably, some overlap can be found between these two questionnaires but the subscale "staff relations" in NSCQ makes this questionnaire more applicable in today's nursing professions. As many studies have noted, new nurses and nursing students often report that intense staff relations is one of their primary sources of stress and that unpleasant relations with co-workers

undermines the job retention and satisfaction levels in the nursing profession (Cowin, 2001; Cowin & Hengstberger-Sims, 2006; Lai et al., 2008; Lai, Peng, & Chang, 2006; Randle, 2001). It has been suggested that 'NSCQ is based on a rigorous review of the literature and a growing body of evidence on how discrete the domains within self-concepts become in adulthood [...] provides an indicator for predicting nurse retention' (Arthur & Randle, 2007, p. 62). The literature shows that NSCQ is a validated and reliable instrument with internal consistency coefficient ranges from .83 to .93. Confirmatory factor analysis has been confirmed as a proficient model fit $>.90$ in fit indices (Cowin, 2001; Cowin et al., 2008). Although, more research is necessary before the questionnaire can be applied to nurses from different social backgrounds and of varying ethnicities (Cao et al., 2012).

3.7 Research design

3.7.1 Overview of quantitative design and the use of self-report instruments

At the early stages of designing the current research, both qualitative and quantitative methods were considered due to their contribution to the research outcomes. Qualitative research emphasizes the qualities of entities and focuses on the socially constructed nature of reality (Denzin & Lincoln, 2002). The essence of qualitative research is how individuals understand the world in which they live and work (Creswell, 2013, p. 8). It

therefore enables researchers to investigate the questions from a complex perspective, instead of quantifying an individual's perception of the world with quantities, intensity, or frequency. Despite the fact that the use of triangulation research is able to compensate for the flawed subjectivity of qualitative research, some issues are still raised against qualitative study, such as the difficulty to replicate and generalize in regards to a population and its lack of transparency (Bryman, 2001).

Alternatively, applying a quantitative research method implies that the whole research framework is closely aligned to 'postpositivism', which suggests that the researchers are not certain about their assumptions when investigating human actions and behaviours, the hypothesis is therefore proposed so that researchers conduct experiments in order to find evidence to reject or accept the hypothesis (Creswell, 2013). Such a concept of postpositivism is at the centre of quantitative research. It drives the investigations on what causes certain outcomes and effects because postpositivists advocate that the world needs to be understood by hypothesis tests or verifications. For instance, in quantitative research, researchers emphasise the importance of cause and effect and operate theoretical relations through the means of measurement and numeric results that allow the generalization of findings.

Within the framework of the quantitative method, researchers tend to challenge traditional notions that have been generally considered absolute truths (Phillips & Burbules, 2000). One of the main features of quantitative research is to examine whether a set of empirical data matches the existing theories and literature in order to examine the causality by investigating causes based on observations. Additionally, the findings that utilize generalization are considered a contribution to particular groups in some contexts (Bryman, 2001). In this thesis, the research aim is to examine Taiwanese nursing students' psychological response to placements in order for a generalization to be made. It is therefore logical to adopt a quantitative research method. In most quantitative research, replication is commonly applied to strengthen and support the existing frameworks because, from a quantitative point of view, the reliability of a piece of research can be confirmed by whether or not the work can be repeated and still expect the same findings.

Nevertheless, the quantitative research method has been criticized. First, it is common that the measurement and concepts in quantitative research are based on assumptions rather than the real world. Second, quantitative research relies heavily on questionnaires and controlled situations, which hinders the connection between research and everyday

life. For example, it is debatable as to whether the concepts in a questionnaire could be accurately delivered to the participants and whether the questionnaire has anything to do with the participants' lives (Bryman, 2001; Cicourel, 1982). For instance, the ways in which a self-report questionnaire can validly assess participants' attitudes is a concern because, unlike skills and knowledge, attitudes and opinions are not transparent and could be easily affected by many factors, such as environment, stimulation, and even participants' feelings when completing the questionnaire (Black, 1999). In order to avoid a false conclusion, clarification of the concepts' measures and the effective ways to prevent invalid responses are essential to ensure the validity of self-report instruments.

Black (1999) suggests that self-report instruments should be treated with caution, particularly in relation to the factors that undermine the accuracy of results. (1) Fake responses might be given by participants because they may want to give an advantageous impression or to avoid showing a bad impression by doing so. A research question cannot be examined if the data results are not transparent, but false responses can be effectively reduced by informing participants of the purposes of the instruments and the study's confidentiality policy. It has been noted, however, that the real purpose of the instrument should be hidden in order to capture individuals' true opinions, but

this may simultaneously cause ethical concerns. (2) Social norms might also affect participants' responses because participants may give a response based on what they have been taught to say or think rather than how they truly feel. Such an issue can be tackled by securing participants' anonymity. (3) The vocabulary used or the limited choice of responses in the self-report instrument also influences participants' understanding of the questions. The solution to this issue is careful wording and the use of a pilot study (Black, 1999). The process of wording and pilot study was also done in this study (see 3.8.2).

3.7.2 Group comparisons

Group comparison is an important element in this study. Comparisons can be either between subjects or within-subjects (Polit & Hungler, 1994); both have been applied for this study. The between subject element involves comparing the control group (who did not attend placements) and the experimental group (who attended placements before the post-test survey), whereas the within-subject element refers to each group's development, for example and in specific relation to this thesis, across time 1, 2, and 3.

3.7.3 Survey method and longitudinal design

The design of this study is based on a collection of numerical information for group comparison with a longitudinal element. More specifically, this experiment will assess and predict any changes in participants' achievement goals and self-concept between the two groups through three different time periods. A self-report survey will serve the purpose of information collection. Descriptive and explanatory surveys are the two most common types (Crookes & Davies, 1998). The aim of a descriptive survey is to collect and describe information from participants on the topics that researchers intend to investigate. An explanatory survey involves exploring a causal relation between two variables that are theoretically or conceptually related. Given these definitions, the survey method utilised in this study provides both purposes of description and explanation. A longitudinal design refers to the procedure of information collection that occurs at more than one point in time (Polit & Hungler, 1994). The important aim of such design enables a "before and after" comparison when an effect might occur after an event (Crookes & Davies, 1998). In this research, the longitudinal information from the control group does not provide information on the answer regarding the effects of placements because those students did not go to placements during the research. Their responses, however, provide a comparison with experimental group' answers.

3.8 Ethical considerations and procedures of administering survey

The ethical approval was a two-stage procedure in this study. Firstly, the approval was granted from Durham University's Ethics Advisory Committee on the research proposal, anonymous questionnaire, and consent form. Secondly, this research was also approved by the Institute Review Board (IRB) in a Hospital in Taiwan. The information on the consent form includes: (1) the study purposes; (2) the instructions for the questionnaire completion; (3) confidentiality; (4) risk and benefits; (5) voluntary nature of the study and participants' rights to refusal/withdraw; (6) researcher's contact details (see Appendix B). In order to capture participants' progress across time, a unique identifier for each participant is necessary. On the basis of ethical consideration, every participant was asked to generate a 7-numerical code based on their personal information, which could not be identified by the researcher or others. They were asked to write down the numerical identifier on the questionnaire they completed. Participants' codes are only used for data analysis and stored in the researcher's personal computer which requires a password for access.

Although this research was ethically approved by Durham University, one of the cooperative schools considered it necessary for this research to be approved by the Institute Review Board, in a Hospital in Taiwan, which is the headquarter of the school. The result from the committee showed that this research is categorized as an expedited review followed by a midterm review and a completion review. The committee also asked the researcher for a certificate from a research ethical course and a Co-Principal Investigator (Co-PI) from their hospital. In order to meet these criteria, the researcher of this study took a research ethics training course and was awarded a certificate after completing the course on human research subjects' protection. This course was provided by the Collaborative Institutional Training Initiative (CITI). CITI is a web-based training course developed by the University of Miami and the Fred Hutchinson Cancer Research Centre in 2000. It is worth noting that individuals under the age of 20 are considered underage in Taiwanese Civil Law, which means that the participants in this research project were still underage. The consent sheet therefore also required permission from students' guardians.

3.8.1 The ethical consideration in this study

There are some potential ethical issues in this study: (1) The participants may not feel like joining this experiment but they may also worry for getting in trouble for not participating; (2) the participants may not fully understand the questions in the questionnaire, which might increase their anxiety when answering the questions; (3) the participants may need to sacrifice some of their free time to complete the questionnaire and some of them may not be willing to do this. In order to protect the participants from these concerns, in the consent form, the researcher clearly stated about the participants' confidentiality, risk and benefits, voluntary nature of the study and researcher's contact (see Appendix B for the consent form). For the confidentiality, each student created a 7 digital identifier based on their private information so their answers and their identity would not be revealed in any publication. All questionnaires are kept in a secure area that only the researcher has access to the questionnaires. The researcher also emphasized that the questionnaire is anonymous voluntary and there would be no form of punishment if they refuse to participate or withdraw from the study. As for the benefits, the researcher explained in the consent form that by participating in this experiment, the students would be able to have an idea how they

see their success (achievement goals) and their self-perception for being nurses; in addition, their responses can help improve nursing curricula.

3.8.2 Translation

As English is not an official language in Taiwan, it has been deemed more reasonable to distribute Chinese versions of the Achievement Goals Questionnaire and Nurses' Self-Concept Questionnaire. Both questionnaires have been translated into Chinese (see Lau & Lee, 2008 for the Chinese Achievement Goals Questionnaire and Gao et al., 2012 for the Chinese Nurse' Self-Concept Questionnaire). The existing Chinese versions of both questionnaires were originally designed for undergraduate students, so the researchers translated the questionnaires to suit participants' junior college literacy levels.

The translation techniques applied in this study are forward-backward translations, as well as a monolingual testing technique which ensures the questions are comprehensible. The procedures are as follows: (1) Forward translation was carried out by a senior staff nurse in Chang-Gung Memorial Hospital in Taiwan, who has presented at international conferences; (2) Backward translation was completed by an independent bilingual translator who received her PhD degree in the School of

Education at Durham University; (3) A monolingual test was implemented by a pilot study on fifteen nursing students; (4) The final version was also compared with the established Chinese Achievement Goal Questionnaire and the Chinese Nurses' Self-Concept Questionnaire to ensure the quality of the translation work.

3.8.3 Pilot study

It is crucial to implement pilot studies because they are considered to be “mini” versions of a full-scale study. Pilot studies identify flaws in the main study which directly undermine the validity of data such as the actual coordinate procedures during questionnaire distribution and vague questions in questionnaires. In addition, another purpose of pilot studies is the access of funding, as it is one of the most convincing ways to demonstrate the significance of the research by showing that the experiment is supported by a robust theory and an organised process in conjunction with valid instruments (Peat, 2001). Nevertheless, researchers still need to treat pilot studies with caution; for instance, some researchers might include the participants who have undertaken a pilot study in the full-scale study due to the difficulty of participant recruitment. This could contaminate the actual study and lead to misleading results (van Teijlingen & Hundley, 2002). The procedures for pilot studies are documented in table

3.5. There are five steps involved in a pilot study. First, it is important to conduct the pilot study in the same condition as the full scale study. Second, when collecting the pilot study data, it is necessary to ask for feedback from the participants in order to ensure the meaning of each item is accurately delivered, the time needed does not cause fatigue in respondents, and to check whether the range of responses is adequately provided for the participants. Third, according to the feedback, removing the questions or statements that cause confusion is also an important step. Fourth, rephrasing questions in order to be brief and precise. Fifth, if it is allowed, there should be a repeat of the pilot study to check if the questionnaire has been tailored accordingly.

Table 3-5 Procedures for pilot studies

1. Administer the questionnaire to pilot subjects in exactly the same way as it will be administered in the main study.
2. Ask the volunteers to give feedback on (1) unclear sentences and difficult questions and (2) record the time needed for completion to see if this cause respondent fatigue; (3) check whether each question gives an adequate range of responses.
3. Discard all the unclear, difficult, or ambiguous questions.
4. Re-word and shorten the questionnaire based on the feedback.
5. Pilot again if possible.

(Peat et al., 2001, p.123)

In accordance with the steps suggested by Peat, the current research also included a pilot study to examine if the questions were comprehensible, the time taken would not cause response fatigue, and initial analysis for the reliability of the questionnaire was satisfactory. It has been recommended that participants in the pilot study should be similar to the target participants (van Teijlingen & Hundley, 2002). The current pilot study should therefore have been targeted towards students without prior clinical experience. However, due to the difficulties of participant recruitment and the avoidance of data contamination, the researcher invited fifteen fourth-year students, aged 20, who had already been on their nursing placements. These fifteen students were the author's students when she was teaching in this school. In 1st February 2013, they volunteered to complete the questionnaires in their free time. After completing the questionnaires, the researcher went back to the school to collect the questionnaires for analysis for this pilot study. During the pilot study, the volunteers were asked to take notes of confusing sentences and the time they spend for completing the questionnaire. The results of the pilot study are included in the results chapter. The fact that they were from the same schools and undertook the same courses and placements as the target participants enabled them to evaluate whether the constructs are possible or impossible to assess in the questionnaire.

3.8.4 Preparation for data collection and the procedures

Maintaining frequent contact with the target classes and keeping information updated before the full-scale questionnaire distribution is essential for a smooth distribution process. The researcher firstly contacted the Head of Department in both schools and asked for permission by providing the approval documents from their school board and ethical committee in Durham University and Chang-Gung Memorial Hospital. The researcher then reached out to the class teachers whose classes were assigned for this project and reported the purpose of the study. Lastly, the researcher also contacted the student leaders of each class in order to arrange appropriate time slots for her arrival. In order not to disturb students' class time, it was more efficient to have access to the class information from the class leader, who is a student representative. Having frequent contact with the class leader is important, especially when the researcher's time for the access to the participants is limited. For example, despite the provided information of class size and the class timetable can be found on the website; the class timetable can sometimes be temporarily adjusted due to various matters. The preparation of this full-scale questionnaire distribution also included a five minute briefing to the prospective participants. After the briefing, they were given the consent form which included information on the study, ethical consideration and the researcher's contact details; they

had seven days in which to make a decision and to acquire their guardian's consent.

This briefing was an opportunity to bond with the participants and to answer their queries face-to-face.

After receiving participants' and their guardians' consent, the researcher began the questionnaire distribution in person. This allowed the researcher to control all of the planned research procedures and ensure that the experimental conditions between the control and experimental group were as equal as possible. Based on the longitudinal design, the questionnaire distribution was scheduled in May (T1), June (T2), and December (T3) 2013. In order to reduce disruption to students' classes, the participants could complete the questionnaires during their free time, which also gave them enough time to answer without being rushed. The student leaders kept all completed questionnaires until the researcher's next visit.

In the Time 1 survey (May, 2013), none of the participants had previous clinical experience and they were all involved in lecture-based learning; the Time 1 survey can therefore be defined as a pre-test. The Time 2 survey was scheduled in June 2013, five weeks after Time 1. In the Time 2 survey, different data collection procedures were

applied to the control and experimental groups. For the control group, who were still on lectured-based learning at schools, the procedures were the same as the Time 1 collection. For the experimental group, the questionnaire distribution did not take place in the classroom; instead, it was in the school accommodation. When Time 2 questionnaire was given, the experimental group was in their last week of placements and the researcher was not authorised to approach students in hospitals. There were therefore two individual collection procedures for the experimental group from the two schools. In school A, the placements coordinator agreed to summon all the participants back to school on a Saturday in order to complete the Time 2 questionnaire in the classrooms; as a result, the researcher was able to collect the data in person. However, this did not happen in school B so the researcher asked the student leader to distribute the questionnaires on her behalf when participants returned to their school accommodation in the evening. In other words, in school B, the Time 2 survey for the experimental group was not distributed by the researcher in person. The last survey (Time 3) was distributed in December 2013. As the experimental group had already returned to the campus, the procedures were similar to that of Time 1. After the questionnaires were collected for each survey, all of the participants were offered a

thank-you gift (stationery worth £5) and given the researcher's contact details in case they had questions or wanted to withdraw.

3.9 Data analysis techniques

Microsoft Excel and SPSS 20 were applied for data calculation and further statistical analysis.

The specific information examined is as follows.

3.9.1 The reliability and validity of achievement goal questionnaire and nurses' self-concept questionnaire

3.9.1.1 Reliability test

When collecting data from self-reported questionnaires, it is important to examine the reliability of each dimension of the questionnaires because the alpha value of reliability test represents to the steadiness of the instrument. There are two levels that a reliability test represents: (1) the consistency among the subscales that examine the main concepts in questionnaires (Polit & Hungler, 1994); and (2) the internal consistency of every item in each subscale. It is worth noting that the reliability value is not a precise outcome, but an estimate. It is therefore used together with other statistical analyses (Cowin, 2001). The most common index used in the reliability assessment is

Cronbach's Alpha (α), which is applied in this study. The range of Cronbach's Alpha is from 0 to 1 (Field, 2013). Any value close to 1 indicates greater internal consistency among the items. A value of .8 is considered reliable for cognitive tests such as intelligence tests. In tests that examine psychological constructs, values below .7 might also be considered acceptable due to the inclusion of a few different dimensions (Kline, 2013). It has been discovered, however, that the α value might be determined by the number of questionnaire items; a higher number of items leads to higher α value (Cortina, 1993). Given this reason, one should examine α value with cautions because it may reach .8 criteria only for its great number of items rather than its internal consistency.

3.9.1.2 Validity test

The current thesis investigates psychological constructs which are often abstract and multi-dimensional. Due to the complexity of measurement, it is vital to ensure that dimensions emerge from the observed data (the responses collected from participants) match with the priori model proposed by researchers or the previous studies. Factor analysis is the technique that examines the validity of questionnaires and confirms what have been measured matches what intend to be measured. There are three main

purposes of factor analysis: (1) to identify the relations between the main construct and its respective subscales; (2) to ensure the questionnaire contains valid items that fit with its aims; (3) to provide deductive purposes and keep the construct precise, while retaining as much of the original information as possible (Field, 2013, p. 628; Hinkle, Wiersma, & Jurs, 2003). In order to achieve these goals, two factor analysis techniques are commonly applied: (1) Exploratory Factor Analysis (EFA); and (2) Confirmatory Factor Analysis (CFA). EFA is used to examine underlying constructs when no clear literature or frameworks are available. EFA helps determine the subscales that emerge from the collected data. Conversely, CFA provides confirmation via observed data to (1) see if the variables extracted from empirical data fit into the framework supported by previous studies and (2) ensure the observed variables from participants' responses are validly correlated with each other as the literature suggests (Dawson, 1998). It is widely acknowledged that EFA should be applied prior to CFA.

Although the reliability and validity of the Achievement Goal Questionnaire and Nurses' Self-Concept Questionnaire have been proven via rich previous literature, for this thesis, it was be the first time to apply both questionnaires to the students in vocational school level in Taiwan. According to existing studies, the Achievement Goal

Questionnaire and Nurses' Self-Concept Questionnaire are mostly applied at an undergraduate level. As stated above, both questionnaires have not been applied together to this particular participants group in the current research context it is therefore suitable for this study to undertake factor analysis to re-confirm the construct validity of both questionnaires. There are several factors that might affect participants' understanding of the questionnaires, such as culture and different educational systems. In EFA analysis, Principal Component Analysis is applied for the confirmation of factor structure and Oblique rotation investigates whether the variables are correlated with each other (Field, 2013).

As previously mentioned, after dividing the observed data into a precise number of subscales, Confirmatory Factor Analysis should be followed because it provides an overall model fit which enables researchers to judge the effects among variables (Byrne, 2013). In this study, the factor analysis seeks to confirm whether the models of the Achievement Goal Questionnaire and Nurses' Self-Concept Questionnaire based on responses from Taiwanese nursing students relatively fit with a priori model suggested in the literature. Through Structural Equation Modelling (SEM), the fit index between collected data and existing framework can be examined. SEM in this study is tested via AMOS software. The process of SEM includes a measurement and a structural model.

The measurement represents how the observed variables (e.g. all subscales of Nurses' Self-Concept Questionnaire such as general self-concept, care, communication, and so on) measure the unobserved variables (e.g. the concept that this research intends to measure such as nurses' self-concept). The structural model displays the relationship between observed variable and unobserved variables (Byrne, 2013; Dawson, 1998).

There are three fit indices from SEM that determine the fitness of data over the predominant model: absolute fit, incremental fit, and indices of model parsimony (Holmes-Smith, 2001). Absolute fit is the result of the Chi-square test, Goodness of Fit Index (GFI), and Root Mean Square Error of Approximation (RMSEA) (Browne & Cudeck, 1989). These values measure "the absolute discrepancy between the matrix of implied variance and covariance to the matrix of empirical sample variance and covariance" (Holmes-Smith, 2001, p. 93). The purpose of the Chi-square test is to discover the difference of the covariance matrix from the original sample and the model specified (Fan, Thompson, & Wang, 1999); however, it is worth noting that a large sample size often leads to model rejection (Cowin, 2001).

Secondly, incremental fit refers to the Tucker-Lewis Index (TLI) and the Relative Non-centrality Index (RNI). These indices measure the difference between the fitted

(proposed) model and a baseline model such as the null model in which no relations between the hypothesised variables exist (Cowin, 2001, p. 19). The third indices, Model Parsimony, evaluate the extent to which the proposed model can be used for the generalization of the population (Holmes-Smith, 2001). The literature suggest that GFI > .09, TLI > .09 refer to an advantageous model fit and an RMSEA between .05-.08 represents a medium fitness, while .08-.1 refers to a below-average fitness (Browne, Cudeck, & Bollen, 1993) (see 4.2.2.1 and 4.2.2.2 for factor analysis results).

3.9.2 Repeated measured multiariate analysis of the time effect on achievement goals and nurses' self-concept

3.9.2.1 What are multivariate analyses?

Multivariate analyses detect the effects of more than one dependent variable at the same time across one or more independent variables. The effects of such a research design are commonly tested by the Multivariate Analysis of Variance (MANOVA). The purpose of Manova is to examine the multivariate effect (how the independent variables have an impact upon the combination of dependent variables) and univariate effects (how the mean scores of each dependent variable differs across the independent variable groups (Mayers, 2013, p. 319). If there are two or more independent variables,

the interaction between variables could be further investigated in order to see the influence of the interaction on dependent variables at the same time. In addition, tracking the same group of participants at subsequent time points could also be examined by using *Repeated Measures Manova*, which is the main technique implemented in this thesis. As with the aforementioned traditional Manova, the repeated measure Manova also simultaneously measures more than two dependent variables; additionally, the measurement is undertaken more than one within-group time periods.

Statisticians emphasize the necessity of the Manova test when multiple dependent variables are measured, as the most important feature of Manova is to comprehensively take account of the relations of all of the dependent variables. If separate analysis (e.g. One-way Anova) is employed multiple times for multiple dependent variables, the results can only show significant differences between dependant variables among the various groups. In the case of this study, if One-way Anova was used, it would only have shown the experimental group response differently to the control group on staff relation self-concept. Yet the strength of the relationship between dependent variables remains unknown (e.g. students' self-concept of staff relations might relate to their self-

concept of professional skills) (Field, 2013; Mayers, 2013). That is to say, one-way Anova ignores the fact that self-concept is a multidimensional construct and overlooks the relations between the sub-dimensions. In addition, theorists suggest that Manova decreases the probability of Type I error (Field, 2013). Each implementation of Anova involves a 5% chance of Type I error occurring because the result is based on 95% confidence. For instance, if One-way Anova is employed three times in a study, the 95% confidence in the rejection of Type I error would be compromised to 85.7% ($.95 \times .95 \times .95 = .857$). Accordingly, the probability of Type I error would be increased from 5% to 14.3% ($1 - .857 = .143$), which is defined as *familywise error rate* (Field, 2013). Despite the advantages gained from Manova, the relations among the dependent variables have to be supported by a robust theory prior to the Manova test (Field, 2013; Mayers, 2013).

In the field of education psychology, Manova is often applied in the assessment of nurses' self-concept and professional teaching studies, and, finally, in academic self-concept research.

3.9.2.2 Assumption and restrictions

The results of Manova are only trustworthy when certain assumptions and rules are met (Mayers, 2013). It is necessary to have at least two dependent variables examined across one or more independent variables. The dependent variables have to be either interval or ration, in order for the parametric requirements to be met. The normal distribution of data and correlation between dependent variables are also important criteria. It has been noted that the correlation should be moderate (up to about $r = -.40$ for negative correlation; $r = .30 - .90$ for positive correlation). Homogeneity of between-group variance needs to be ensured otherwise the validity of the results could be compromised, especially when the group size is unequal (Mayers, 2013). Such homogeneity can be tested through Levene's test in which an insignificance result ($p > .05$) indicates homogeneity. In a similar fashion, sphericity of within-group variance is equally essential and can be confirmed through Mauchly's test. A significant result of Mauchly's test refers to the violation of sphericity. In such cases, the adjusted value of Greenhouse-Geisser could be applied to remedy the violation.

3.9.2.3 Current data consideration for Manova procedures

There are two parts of statistical results in Manova still to consider: the multivariate outcome and univariate outcome. The first explores an overall effect of the independent variable(s) on the combined dependent variables. The latter investigates the main effect of the independent variable(s) on dependent variables separately.

In the results of multivariate and univariate Manova, the F value determines whether or not to reject the null hypothesis that there is no difference between dependent variables within the groups. The F test is based on the sum of squares between and within groups and the sum of cross products (covariance) (Hand & Taylor, 1987; Tabachnick & Fidell, 2001). There are four options for F values: Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. The literature suggests that Hotelling's Trace can be utilised when there are two groups, such as the control group and experimental group in this study; however, it is not as powerful as other options (Mayers, 2013). In this study, the F value based on Pillai's Trace was chosen because it is not limited to an equal sample size in each group (Cowin, 2001) and has been suggested as the most robust test for group differences (Olson, 1976).

3.9.2.4 Simple effect

When a significant interaction is detected, further exploration of the source of the interaction could be undertaken (Mayers, 2013). Simple effects analysis can help to explore and identify the source of interaction by examining the effect of one independent variable (e.g. the control and experimental group) at each level of another independent variable (e.g. time). This analysis is based on the linearly independent pairwise comparison that can be run by syntax in the SPSS package.

3.9.2.5 Effect size and statistical power

According to Cohen (1992), statistical power analysis is critical to empirical research in social and behavioural science because it reveals the probability that a null hypothesis is rejected when it is false. The desired power is considered to be .8 (Hintze, 2008). Cohen also explained that the necessary sample size can also be determined by power analysis. “Statistical power analysis exploits the mathematical relationship among four variables in statistical inference: power, significance criterion, sample size and effect size. The relation is such that when any three of them are fixed, the fourth is determined” (Cohen, 1992, p. 98). Statistical power can be calculated before data collection by referencing information from the literature to determine the necessary

sample size (Suresh & Chandrashekara, 2012). In a similar fashion, after the full-scale data collection is completed, the actual sample size and the results of the effect size and significance criterion can be used to determine the actual statistical power of the validity of the empirical results.

Effect size is one way to evaluate the size of the treatment effects between two groups without the influence of sample size because large sample size easily leads to significant results even when the effects of the treatment is weak (Coe, 2002). In the test of Anova or Manova, the effect size is called “eta-squared”. The strength of the effect size (eta-squared) has been proposed as follows: the vales of .01, .06, and .14 refer to “small”, “medium”, and “large” effects respectively (Cohen, 2013).

3.9.3 Correlation and regression

In the current research, research question three aims to test whether students’ mastery approach is able to predict their self-concept of staff relations. Based on the existing literature, the mastery goal predicts the epistemic regulation which focuses on integrating different points of view from different peers in order to achieve a better

performance (Darnon, Butera, & Harackiewicz, 2007; Darnon et al., 2006). In other words, the mastery goal leads to employees' efficient leader-members information exchange (Janssen & Van Yperen, 2004) and cooperative behaviours with colleagues (Poortvliet & Darnon, 2010).

The empirical evidence above shows that individuals with the mastery goal have better collegial relationships, so it is logical to see students with the mastery goal have positive relations with staff which then results in students' higher self-concept regarding working with others. The researcher of this study therefore hypothesizes that nursing students with the mastery goal should be able to predict their self-concept of staff relations. In order to test this hypothesis, correlation and regression were calculated. The correlation test is the step prior to regression because correlation shows whether two variables are significantly related. If the relation exists, a further step can be taken through regression to see whether an independent variable(s) is able to predict a dependent variable. If there is only one independent variable work acting as a predictor, simple regression would be applied. If there is more than one independent variable, multiple regressions are an appropriate method for the prediction. For this study, simple regression is applied because the researcher only wishes to see the mastery goal's

prediction of the self-concept of staff relations. The statistical results of correlation and regression are more straightforward than the results from Manova, so the details of how to interpret correlation and regression will be documented in the results chapter.

3.9.4 Missing data

Self-reported questionnaires are one of the most common tools for information collection in quantitative research. Attrition that occurs during data collection has been considered a main issue, however, particularly when quantitative data also has a longitudinal element. Attrition in a longitudinal survey is not uncommon because this type of experiment often requires participants' commitment. Even with a careful design and pilot study, missing data and participants dropping out is inevitable (Sterne et al., 2009). Attrition sometimes occurs at the end of experiments, but it is also common for participants who drop out in one measure to return in the next test (Scheffer, 2002; Twisk & de Vente, 2002). Missing data greatly undermines the validity of quantitative results; however, it has often been overlooked. This is partly because the statistical method for tackling missing data has only recently become accessible to researchers (Sterne et al., 2009).

In the current study, the attrition rate in the experimental group was approximately 30% while the control group had 13%. For the experimental group, the response rate in Time 2 dropped dramatically and not many of the participants returned for the follow-up study (Time 3). As a result, the response rate in T3 is not much different to T2. As mentioned above, if the missing values are ignored, the inference could overestimate or underestimate the actual effect because the observed data is from those participants who share similar characteristics (Rubin, 1976). For example, those who come back for the post-test might be more interested in the research topic or more responsible and self-motivated than those who do not return (Lieberman & Remedios, 2007). The generalisability of the study would therefore be compromised as the results only reflect a certain type of participants.

3.9.4.1 Missing data mechanism

One way of tackling missing responses is through *Imputation* by computing a set of completed data based on the observed data. Imputation is not, however, the solution to all types of missing data. In order to avoid a misleading data set after imputation, it is important to recognise the reason and the mechanism behind the missing values. It is widely acknowledged that when the missing data is based on the mechanism of MCAR

(missing completely at random) or MAR (missing at random), the imputation results are safer from bias than the missing values shown MNAR (missing not at random)(Sterne et al., 2009)(Sterne et al., 2009b).

Following the missing data mechanism mentioned above, the definition for each will be elaborated in this paragraph according to the work of Scheffer (2002). The first situation, MCAR, describes the point at which the missing values are independent from the other variables and the variable contains missing data, too. In other words, there is no systematic difference found between the missing data and the observed values. Yet it is relatively rare to observe MCAR in empirical data (Rubin, 1976). The second situation, MAR, refers to missing values depending on another observed variable, but not depending on any other underlying variables (Peugh & Enders, 2004). For example, it is found that students from low-income families have higher attrition rates. The next step is to closely scrutinise the income variable and the attrition must not be related to any underlying variables (e.g. students' achievement). Otherwise, it is difficult to determine whether students' attrition is related to their family's income or to their school performance. Scheffer (2002) also noted that the term "Missing at Random" is not entirely correct because the missing values are actually conditional on some

observed variables, rather than randomly missing. The last type, MNAR, means that the probability of a missing value depends on the variable itself. For instance, it might be found that the participants who have high incomes are less likely to report their income. In this case, the missing value of income is found to be related to a certain type of income (e.g. higher income or lower income), such a missing mechanism does not occur randomly. This type of missing values is often considered the most difficult model to produce valid imputation results (Scheffer, 2002, p. 153).

3.9.4.2 Techniques applied for the current study

There are several ways to examine missing completely at random data, such as Little's MCAR test (Little, 1988) and separated variance t test (Dixon, 1981; Enders, 2010). In this thesis, both techniques have been applied and it has discovered that the pattern is missing at random. In Time 2 survey, the experimental group students were in hospitals, so the class leader distributed the questionnaire on the researcher's behalf but one of the class student leaders in the experimental group did not distribute the questionnaire to everyone as she was asked to. After contacting some participants, received reports indicated that; instead, that student leader only gave the questionnaire to people based on her own convenience. This caused a high dropout level during the Time 2 survey,

but it also provided proof that participants' reasons for dropping out had no relationship with their T1 response which can be seen as evidence to reject the possibility of missing not at random (Little, 1995).

Based on the test confirming that the missing data has a random pattern, it is plausible to apply imputation without the risk of biased results. The Expectation-Maximization (EM) has been considered in this study for data imputation. EM provides maximum likelihood estimates in the presence of missing data (Barzi & Woodward, 2004, p. 37). The decision to use EM was made on the basis of the suggestion by Enders (2010) that maximum likelihood offers a straightforward way in which to estimate interaction effects which is also the aim of this experiment. Recent literature showed that the same imputation technique in achievement goal studies is also utilised to tackle missing data and avoid biased conclusions (see (Hulleman, Durik, Schweigert, and Harackiewicz (2008); Tuominen-Soini, Salmela-Aro, & Niemivirta, 2011). It has been suggested that sensitivity analysis is necessary after imputation (Héraud-Bousquet, Larsen, Carpenter, Desenclos, & Le Strat, 2012). According to the instruction suggested by the Institute for Health and Care Research (eMGO+), the analysis has been conducted by a complete case analysis (excluding all the cases with missing data) followed by imputed results.

Lastly, comparison between these two sets of results shows no substantial difference, which confirms the validity of the imputed data.

3.9.5 Summary

This chapter introduced the methods applied to the current thesis which aims to examine how clinical placements affect students' achievement goals and nurses' self-concept, as well as exploring whether the mastery goal predicts nurses' self-concept by outlining the participants, questionnaires used, research design, procedures for data collection, statistical analysis techniques and finally, and techniques for dealing with missing data.

The longitudinal data came from the control and experimental groups providing a clear comparison, so the effects of pre- and post-placement are evident. The nursing education and placement training in Taiwan are also introduced because it is participants' identity as trainees and learning in clinical contexts that make the current research different from other studies. The details for the two questionnaires used have been validated for the use of Taiwanese students. The statistical methods applied are (1) repeated measure of Manova because one of the aims of this study is to compare the differences between two groups within three different time frames and also because both of the questionnaires are multidimensional; (2) correlation and regression are used

because another research aim is to make predictions. The last section in this chapter provides the methods applied to deal with missing data, given the 30% attrition rate showed in Time 2. The statistical examination revealed that the attrition in the current study is categorized as missing not at random and further imputation can be carried out with a lower risk of biased results. The choice for the expectation maximization (EM) for data imputation is justified for this study.

Chapter 4 Result

4.1. Introduction and overview

The purpose of this chapter is to outline the results of the analysis in order to answer the following research questions based on the Achievement Goal Questionnaire (AGQ) and the Nurses' Self-Concept Questionnaire (NSCQ): (1) How do clinical placements affect Taiwanese students' achievement goals in their nursing module (2) How does the first-time clinical placement affect Taiwanese student nurses' self-concept (NSCQ)? (3) Whether the mastery approach goal predicts students' self-concept of staff relations?

First, this chapter will describe how the AGQ and NSCQ were examined for face validity in a pilot study involving a small group of participants. Based on the information collected from participants and the advice acquired from the author of the NSCQ, the questionnaires were revised for the full scale study.

Second, this chapter describes the results of the full scale study, including factor analysis for both questionnaires, reliability and validity analysis for all the constructs followed by the statistical outcomes of the answers to the research questions. This aim of the study was to examine whether clinical placements affect Taiwanese nursing students' achievement goals and professional self-concept relative to a group of

students who do not experience placement. In order to examine the effect of placements, participants were divided into two groups: The Experimental Group that includes students who received placement training, and the Control group that includes students who did not receive placement. To examine the effects of placement, the study was longitudinal in which participants answered questions on the questionnaires at three time points. The first was the pre-test (T1 May 2013), post-test (June 2013), and follow-up test (December 2013).

Overall, this chapter explains how the data was collected and analyzed in both phases of the study. The findings for the main study are reported and related to the research hypotheses.

4.2. Pilot study

4.2.1. Reliability analysis and descriptive results

Cronbach's Alpha

The pilot study began by testing the internal consistency of the questionnaires, primarily by analysing Cronbach's Alpha of each subscale. In this experiment, the researcher invited fifteen fourth-year nursing students to participate in the pilot study. They were

asked to complete the questionnaires then to provide feedback. According to the feedback, the researcher revised the questionnaires (see detailed procedures in the methodology chapter 6.2). The aim of the internal consistency test is to check the stability of the questionnaires.

The overall result of the students' consistency estimated responses was similar at the item and scale level. The internal consistency of the Achievement Goal Questionnaire ranged from .72 in performance avoidance goal to .84 in mastery approach goal. As for Nurses' Self-Concept, the internal consistency among items ranged from .71 in the care subscale to .88 in the staff relations subscale. Despite most of the literature suggesting that the value of the desired Cronbach's Alpha is .8, many of the subscales in this pilot study did not reach the desired criterion. Kline (1999) noted, however, that value of .7 in psychological construct tests seems more realistic because psychological constructs are often multidimensional. The sample size in this pilot study was not enough for factor analysis, which requires the number of participants to be no less than 100 (Kline, 1979) or to meet the Subject-to-Variables (STV) ratio of 20:1 (20 participants: 1 variable) (Hair et al., 1995).

4.2.2. Subscale correlation

All the subscales in the Achievement Goals Questionnaires (AGQ) and Nurses' Self-Concept Questionnaire (NSCQ) are theoretically and empirically correlated since they have been defined as multidimensional constructs (Cowin, 2001; Elliot & McGregor, 2001b). Thus, this pilot study also intended to prove that these subscales are also conceptually related to Taiwanese nursing students. Despite the fact that the correlation confirms the theoretical connection, researchers should be cautious that the scales are not highly correlated to each other ($r > .8$). High correlation between 2 subscales indicates that they might be the same concepts; it makes little sense to differentiate these (Mayers, 2013).

This pilot study shows that, in AGQ, the performance approach, mastery approach, and mastery avoidance were correlated as the literature suggested. In addition outcome also indicates that most of the subscales in NSCQ were correlated, except for the Nurses' General Self-Concept (NGSC). The literature suggests, however, that the NGSC should be particularly related to other subscales because it represents whether nurses are enjoying and satisfied with this profession, and considers whether participants feel proud of being nurses (Cowin, 2001). Feeling proud and gaining enjoyment from the workplace is associated with professional identity, which later affects work

performance because they accept the identity of being nurses. In this pilot study, the volunteers were 4th year students whose nurse identity may be lower than their juniors. Clinical learning is often challenging so, the more placements student nurses have undertaken, the more challenges or frustrations they may have endured. However, the sample size is too small to validate this conclusion.

For the pilot study, 15 fourth year nursing students volunteered for the pilot version of questionnaires and to take a note of any confusing sentences and the time they spent (see 3.8.2 for the procedures). The findings from the suggested there were three important issues related to completing the questionnaire:

(1) It took 8-10 minutes to complete:

‘The questionnaire did not include too many questions that made us tired. It did not take me too long, about 10 minutes’ (from participant 2).

(2) In the Achievement Goal Questionnaire, some sentences were too similar for students to differentiate the subtle differences between goals; for example, clarification is needed for the fifth item in the Achievement Goal Questionnaire, which belongs to the mastery avoidance goal:

‘When I read question 5, I felt this question is similar to question 4 so I could not tell the difference between these two questions’ (from participant 7)

(3) In the Nurses’ Self-Concept Questionnaire (NSCQ), it was difficult for students to report the subscale that represented nursing leadership because leadership is rarely a learning aim during their stage of the nursing placements:

‘It was difficult for us to answer the questions about our self-concept of leadership because we do not have chance to be a leader during our placement’ (from participants 6)

Based on the above comments, item 5 (the mastery avoidance goal: sometimes I am afraid that I may not understand the content of this class as thoroughly as I would like) was rephrased without changing their original meaning, which facilitated participants to distinguish item 4 and item 5 and increased their understanding of the questions. For example, when translating to Chinese, in item 5, the author of this study emphasized ‘understand the content of this class’ which referred to textbooks and handouts. As for item 4, the author emphasized “learn everything that one possibility could in that class’. Regarding the difficulty of assessing nursing leadership, after consulting the author of the Nurses’ Self-Concept Questionnaire, Dr. Leanne Cowin, the subscale of leadership was excluded because she suggested it is not essential to assess the self-concept of

leadership given that the participants of this study were junior nursing students. Lastly, after the questionnaire was revised, the same volunteers were asked to complete the questionnaire again and they reported that the revised version was more comprehensible.

4.3. Main study

For the main study, 276 participants completed the AGQ and the NSCQ at three time points in 2013, T1 (pretest) was in May, T2 (posttest) in June and T3 (follow-up test) in December. In T1, 136 participants were in the treatment group and 140 participants were in the control group (see table 4-6 for the number of the participants for each time point and see 3.9.4.2 for the details of data imputation).

Table 4-6 Number of participants and the attrition rate in different time points

	Experimental group (number of participants/attrition rate)	Control group (number of participants/attrition rate)
T1	136/100%	140/100%
T2	104/23%	122/13%
T3	94/31%	120/14%
After imputation	136/100%	140/100%

4.3.1. Testing reliability of the AGQ and the NSCQ

Because the AGQ and the NSCQ were being used with a new population in a new language, the instrument was examined for reliability and validity. Reliability tests were conducted using Cronbach's alpha and internal validity tests were completed via exploratory and confirmatory techniques.

4.3.1.1. Cronbach's alpha

Table 4-7 Subscale Alpha. Mean and Standard Deviation Score For AGQ from the Full Scale Study N = 276

Subscales Nursing	Cronbach's Alpha
Performance approach	.90
Item 1: It is important for me to do better than other students.	
Item 2: It is important for me to do well compared to others in this class.	
Item 3: My goal in this class is to get a better grade than most of the other students.	
Mastery avoidance	.83
Item 4: I worry that I may not learn all that I possibly could in this class.	
Item 5: Sometimes I am afraid that I may not understand the content of this class as thoroughly as I'd like.	

Results

Item 6: I am often concerned that I may not learn all that there is to learn in this class.

Mastery approach	.86
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Item 7: I want to learn as much as possible from this class.

Item 8: It is important for me to understand the content of this course as thoroughly as possible.

Item 9: I desire to completely master the material presented in this class.

Performance approach	.76
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Item 10: I just want to avoid doing poorly in this class.

Item 11: My goal in this class is to avoid performing poorly.

Item 12: My fear of performing poorly in this class is often what motivates me.

Table 4-8 Subscale Alpha. Mean and Standard Deviation Score for NSCQ from the Full Scale Study N = 276

Subscales	Cronbach's Alpha
NGSC	.93

Item 3: I get a lot of enjoyment out of being a nurse.

Item 6: Being a nurse gives me great enjoyment.

Item 12: I like being a nurse.

Item 16: I am proud to be a nurse.

Item 18: I am enthusiastic about nursing

Results

Item 27: My work as a nurse is very interesting

Care	.86
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Item 1: I have the ability to care for my patients' needs.

Item 20: Taking care of patients is easy for me.

Item 23: I am interested in caring for my patients.

Item 29: I am confident about my ability to care for patients.

Item 31: I look forward to caring for my patients.

Item 34: I am proud of my ability to care for patients.

Staff Relations	.88
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Item 2: I enjoy working with other health professionals.

Item 9: I gain a lot of professional pleasure from my relationship with colleagues.

Item 11: I can easily relate to my colleagues.

Item 15: I get along well with other health professionals.

Item 24: I have a good working relationship with other health professionals.

Item 32: I am able to form good working relationships with other health professionals.

Communication	.91
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Item 7: I am good at verbally communicating with colleagues and patients.

Item 13: I enjoy communicating information and ideas with colleagues and patients.

Item 21: I can confidently communicate with patients and colleagues.

Results

Item 26: Communicating effectively with patients and colleagues is easy for me.

Items 30: I have the ability to communicate effectively with patients and colleagues

Item 36: I am good at communicating with colleagues and patients

Knowledge	.85
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Item 4: I find new nursing knowledge stimulating.

Item 10: I am able to master new nursing knowledge.

Item 14: I look forward taking further courses that improve my nursing knowledge.

Item 19: I am constantly incorporating new nursing knowledge into my patient care.

Item 25: I am respected as a nurse because of my nursing knowledge.

Item 35: I enjoy learning new nursing knowledge.

Table 4-7 shows that for the AGQ, all four constructs were above the acceptable limits of .7 (Field, 2013). Similarly, in the NSCQ, every subscale showed satisfactory Cronbach's Alpha. The NSCQ revealed the highest Cronbach's $\alpha = .93$, while the subscale of knowledge showed the lowest Cronbach's $\alpha = .85$ (Table 4-8)

4.3.1.2. Subscales correlations

As mentioned earlier, the psychological constructs studied in this research are multidimensional, Pearson's r was therefore applied for the results of the correlation coefficient scores between subscales. The scholars noted that the correlation exists among four achievement goals; however, the correlation between the performance avoidance goal and other goals is less straightforward. This is because it can be conceptually related to other goals, but studies have also found that the performance avoidance goal is mostly related to negative learning outcomes or maladaptive behaviour, which is very different from the other goals (Senko et al., 2011).

Table 4-9 Subscale correlation for AGQ from the full scale study N 276

Nursing	PAP	MAV	MAP	PAV
PAP	1			
MAV	.33**	1		
MAP	.43**	.63**	1	
PAV	-.27**	.02	-.24**	1

Table 4-9 confirms the correlation among students' achievement goals. The performance approach, mastery avoidance, and mastery approach have weak to moderate correlation, with Pearson's r ranging from .02 – .63. The performance

avoidance goal was negatively correlated with the performance approach and mastery approach goals, but was not related to the mastery avoidance goal.

Table 4-10 Subscale correlation for NSCQ from full scale study N = 276

	NGSC	Care	Staff Relations	Communication	Knowledge
NGSC	1				
Care	.77**	1			
Staff Relations	.74**	.77**	1		
Communication	.67**	.73**	.72**	1	
Knowledge	.73**	.79**	.74**	.74**	1

Table 4-10 indicates that all of the subscales in the NSCQ are positively correlated (Pearson's r ranging from .67 – .79), but remain conceptually different because none of the r is greater than .8. As mentioned earlier, it would be concerning if Pearson's r was higher than .8 in relation to the multidimensional construct assessment because high correlation implies that the two subscales share too many similarities so there is no need to subdivide into two scales. For example, in Table 14, the Pearson's r between care and knowledge is almost .8. This can be interpreted to mean that participants could not

differentiate between the concept of knowledge and care or that the wording makes these concepts sound similar to students.

4.3.2. Testing validity of AGQ and NSCQ

4.3.2.1. Exploratory Factor Analysis (EFA)

The purpose of EFA is to test whether the number of components extracted from the data matches with the literature. It has been recommended that, in the report of the Total Variance Explained, the cumulative extraction sums of squared loadings should be emphasized, as this indicates how many variances can be explained (Field, 2013). The results of the cumulative extraction sums of squared loadings showed 72.03% and 72.5% for AGQ and NSCQ respectively. The significance of factor loading also depends on the sample size (Stevens, 2012). Moreover, the sample size needs to be taken into account when interpreting the values of factor loadings: for a sample size of 50, a factor loading of .722 is regarded as significant; for 100 participants, a factor loading of .51 is acceptable; for 200 participants, a factor loading is considered meaningful when it is higher than .364; for 300 participants, a factor loading should be at least .298. The sample size in this study is 276, meaning that a factor loading of .3 is acceptable.

The total number of participants (276 students) in this experiment met the criterion that enabled the data to be examined using factor analysis. There are two assumptions that have to be ensured before conducting Exploratory Factory Analysis (EFA): (1) that there is an adequate sample and (2) that the subscales in the questions are correlated to each other. The measure of sample adequacy can be undertaken through the Kaiser-Meyer-Olkin Measure of Sample Adequacy (KMO). The KMO statistic value ranges between 0 and 1. The KMO value that is close to 1 means that the factor analysis is able to differentiate among subscales in the questionnaire. Hutcheson and Sofroniou (1999) provided a guideline for KMO value. The values of .9, .7, and .6 correspond to excellent, medium, and mediocre sampling adequacy levels. If a value greater than .5, it is regarded as barely acceptable (Kaiser, 1974).

Table 4-11 KMO and Barlett's Test for AGQ and NSCQ

		AGQ	NCSQ
KMO		.82	.95
Bartlett's Test of Sphericity	Approx. Chi-Square	1968,98	7455.59
	df	66	435
	Sig	.000	.000

Table 4.11 indicates a very effective sampling adequacy with which to conduct factor analysis for both questionnaires. The second assumption, the correlation among subscales, can be confirmed via Bartlett's test. Despite this test being reported in most EFA results, it does not seem particularly useful because the significant value is highly dependent on a bigger sample size (Field, 2013). One should not therefore be overconfident about the reliability of the Bartlett's test and should report the Bartlett's test with caution, as the correlation among the subscales in a questionnaire can be very small but the result is still shown to be significant because of the great sample size.

Table 4-12 AGQ EFA Factor Loadings

Results

	Component			
	1	2	3	4
MAP1	.82			
MAP2	.79			
MAP3	.69			
MAV1	.69			
MAV2		.89		
MAV3		.84		
PAP1			.86	
PAP2			.95	
PAP3			.92	
PAV1				.82
PAV2				.86
PAV3				.76

Table 4-13 NSCQ EFA Factor Loadings

Results

Component					
	1	2	3	4	5
CARE1			.89		
CARE2			.67		
CARE3			.69		
CARE4	.66				
CARE5		.44			
CARE6	.34				
COMU1	.33				
COMU2	.45			.	
COMU3	.68				
COMU4	.75				
COMU5	.71				
COMU6	.70				
NGSC1		.69			
NGSC2		.79			
NGSC3		.86			
NGSC4		.59			
NGSC5		.83			
NGSC6		.70			
KNOW1		.		.47	

Results

KNOW2	.	.69
KNOW3		.58
KNOW4		.36
KNOW5		.73
KNOW6		.70
STAF1		.43
STAF2		.46
STAF3		.37
STAF4		.30
STAF5		.43
STAF6		.65

COMU: communication; NGSC: nurses' general self-concept; KNOW: knowledge; STFA: staff relations

Table 4.12 shows that the four components that have been identified to fit the 2 x 2 frameworks of the achievement goals as the literature suggested. One item in the mastery avoidance goal was in fact categorized by students in the mastery approach goal section, which implies that participants perceived this item to be a similar concept to that of the mastery approach goal rather than the avoidance valence. Table 4.13 reveals that the factor analysis in the NSCQ was more problematic than the AGQ, especially in the subscale of care and communication. Two questions from the care subscale were categorized in communication (care item 4: I am confident about my

ability to care for patients; care item 6: I am proud of my ability to care for patients) and one question (care item 5: I look forward to caring for my patients) in nurses' general self-concept. Such results demonstrated that, when participants read care items 4 and 6, they might connect the nursing ability with their communication skills. In a similar fashion, when the participants read care item 5, how much they look forward to taking care of patients is associated with their self-concept of nursing knowledge. Thus, the final results of care, communication, and knowledge should be interpreted carefully due to a less straightforward discrepancy among these subscales. The hypothesized constructs for both achievement goal questionnaire and nurses' self-concept did not match with the literature so the confirmatory factor analysis were conducted in two different ways: one was to base on the original model suggested by the literature and the other way was to base on the hypothesized model that has been derived from the current exploratory factor analysis results.

4.3.2.2. Confirmatory Factor Analysis (CFA)

The confirmatory factor analysis (CFA) and path model are applied in order to judge the suitability of the model fit derived from the empirical data. Based on criteria compiled by Byrne (2013) and Arbuckle (1999), three indices form the focus of the

report of the model fit: (1) RMSEA= 0, > .08, >.10 suggests a good fit, mediocre fit, and poor fit. RMSEA is one of the most informative indices in SEM (Byrne, 2013); (2) the Tucker-Lewis Index (TLI) = 0 indicates a poor fit, whereas a value close to 1 implies a very good fit; (3) the Comparative Fit Index (CFI) = 0 refers to a poor fit and a value > .95 represents a good fit.

The exploratory factor analysis for both questionnaires indicated the hypothesized model in the current study was different from the literature suggested. In the achievement goal questionnaire, one question for the mastery avoidance goal loaded in the mastery approach goal. As for nurses' self-concept questionnaire, 2 questions for care self-concept were categorized to communication self-concept and 1 question for care self-concept was in nurses' general self-concept. For this reason, as mentioned before, the author of this research conducted confirmatory factor analysis with two models; one was original model that suggested by the authors of the achievement goal questionnaire and nurses' self-concept, the other model was the hypothesized model based on the exploratory factor analysis in this research. The original and hypothesized AGQ models have been depicted (see figure 4-6 and 4-7). The original and Hypothesized NSCQ model are shown in figure 4-8 and figure 4-9.

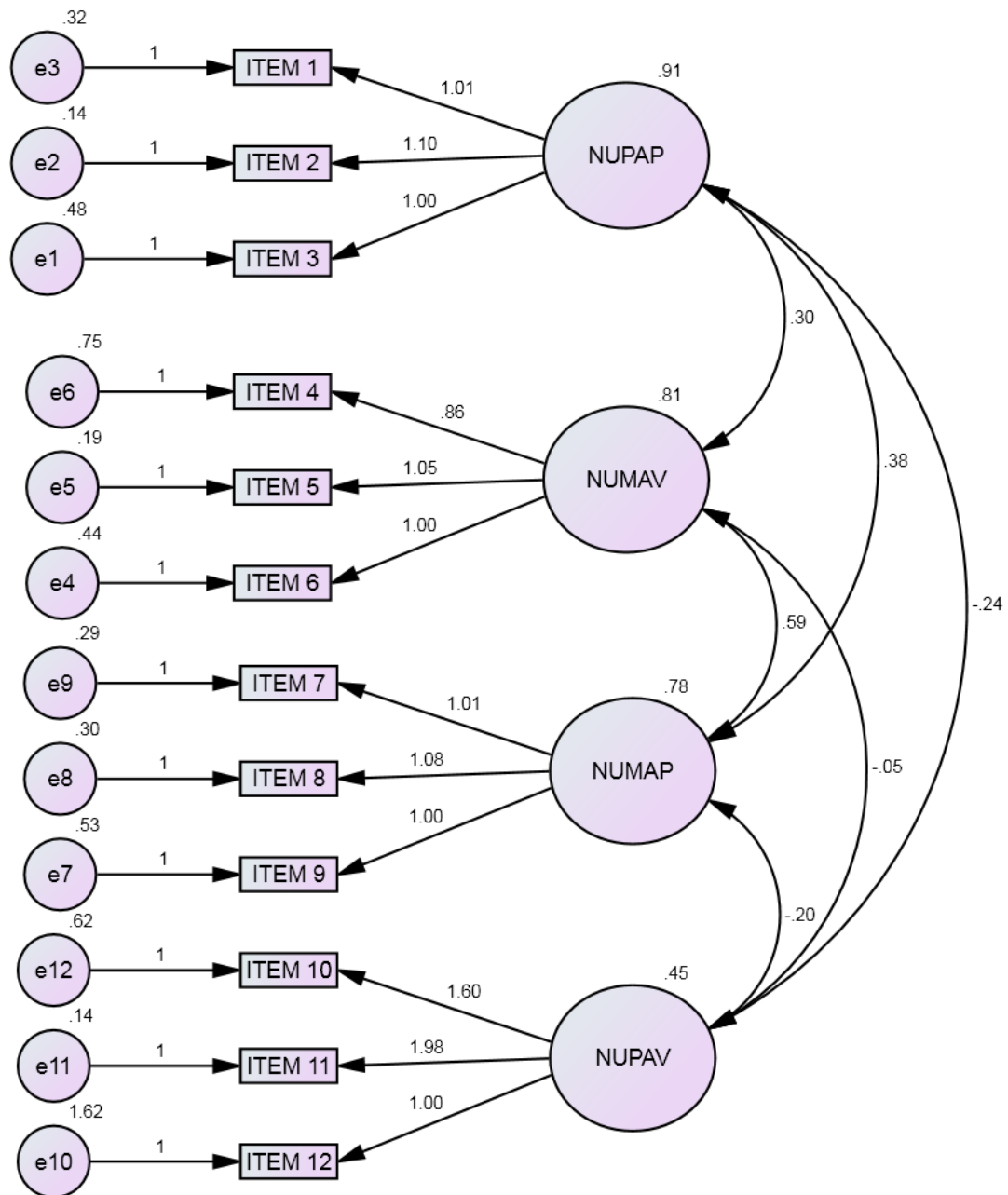


Figure 4-6 AGQ CFA factor loading and path model based on the original model $N = 276$;
NU: nursing module

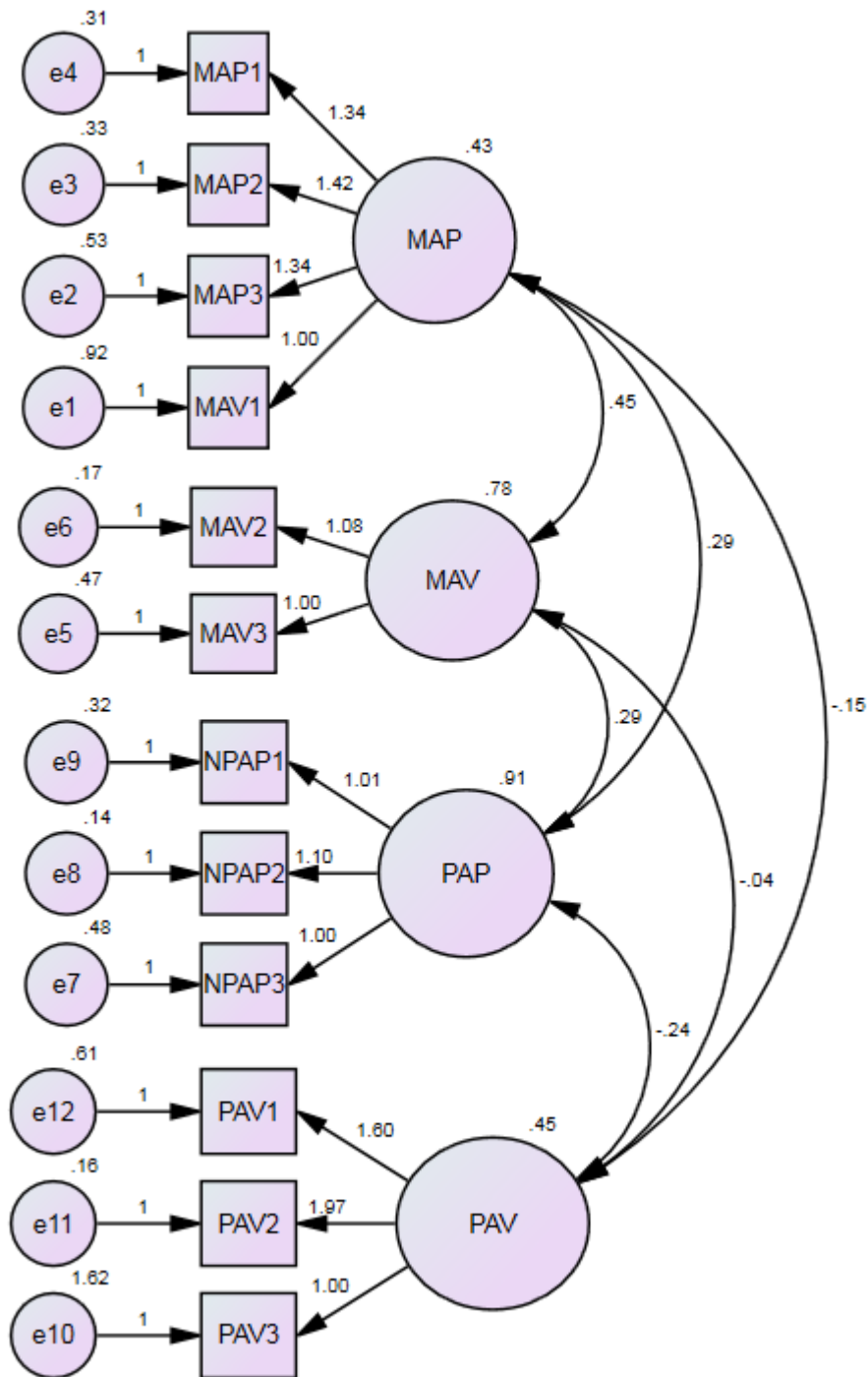


Figure 4-7 AGQ CFA factor loading and path model based on the hypothesized model N = 276.

Results

Table 4-14 AGQ model fit index between the original and the hypothesized model

CFA model fit index	Model suggested by Elliot and McGregor(2001)	Hypothesized model based on EFA in the current study
χ^2	121.8	167.8
df	48	48
RMSEA	.075	.095
<p>> .08 = mediocre fit</p> <p>> .10 = poor fit (Byrne, 2001)</p>		
The Tucker-Lewis Index (TLI)	.94	.95
<p>0 = poor fit</p> <p>Close to 1 = good fit (Arbuckle, 2003)</p>		
The Comparative Fit Index (CFI)	.96	.94
<p>0 = poor fit</p> <p>> .95 = good fit (Arbuckle, 2003)</p>		

Table 4.14 shows that, in the original model, the CFA results for AGQ were relatively reassuring: $\chi^2 = 121.8$, d.f. = 48 and fit indices of TLI = .94, CFI= .96 , RMSEA = .075. As for the hypothesized model, $\chi^2 = 167.8$, d.f. = 48 and fit indices of TLI = .95,

CFI= .94 , RMSEA = .095. According to the above criteria, the empirical data of achievement goals in this research fitted both the original and hypothesized model with mediocre level.

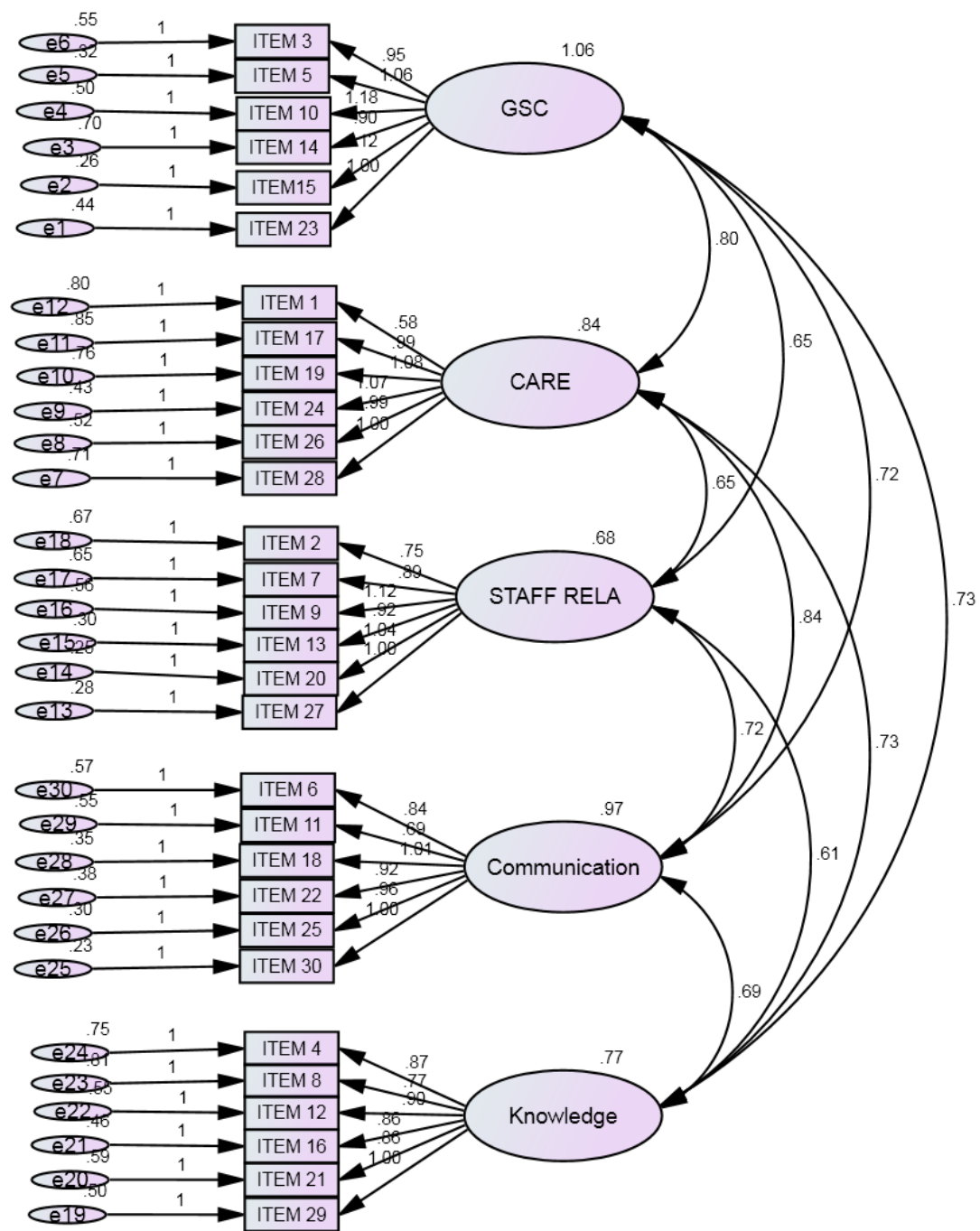


Figure 4-8 NSCQ CFA factor loading and path model based on the original model N = 276

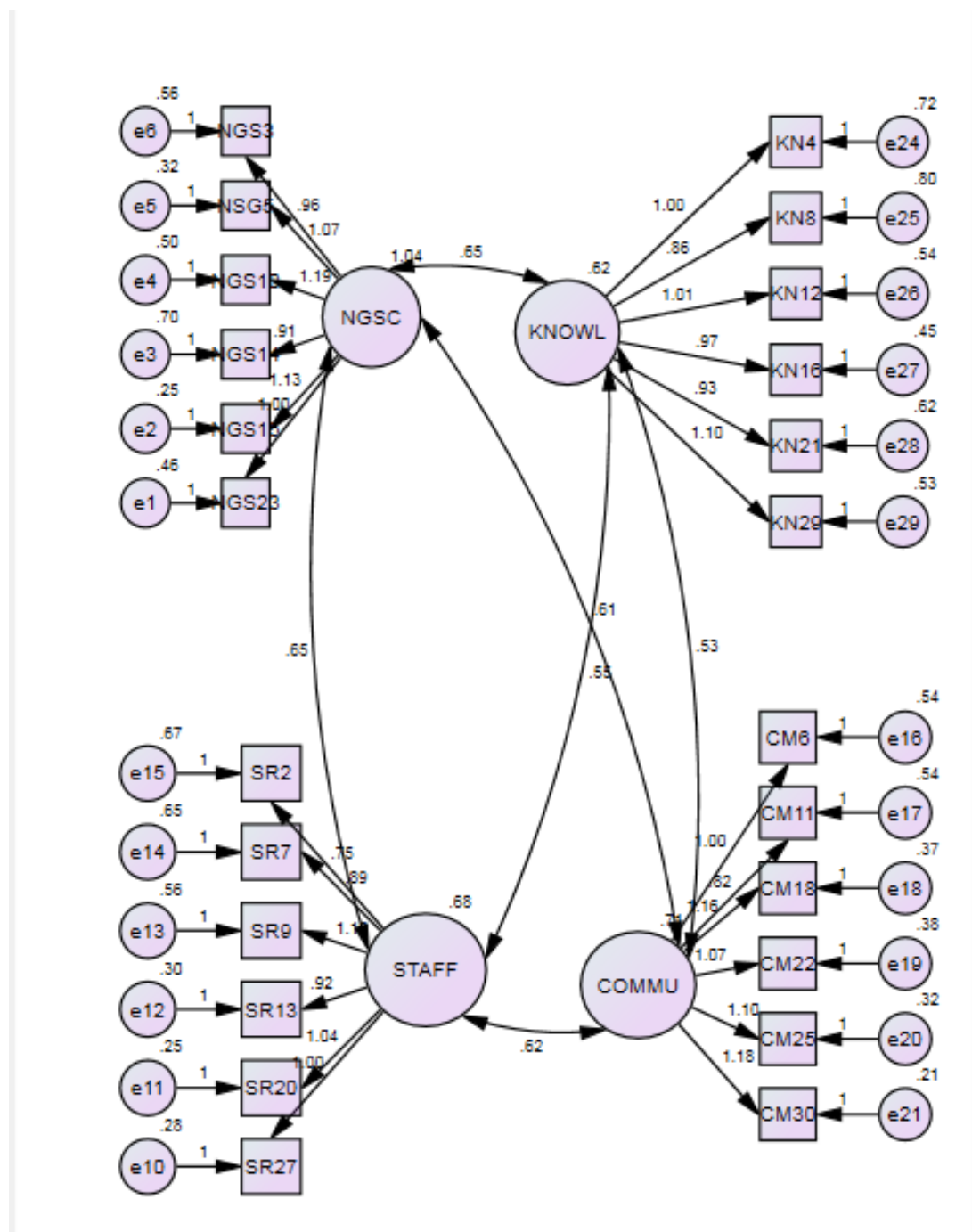


Figure 4-9 NSCQ CFA factor loading and path model based on the hypothesized model N = 276

Results

Table 4-15 NSCQ model fit index between the original and the hypothesized model

CFA model fit index	Model suggested by Cowin (2001)	Hypothesized model based on EFA in the current study (the dimension of care was removed)
χ^2	1011.7	1038
df	220	246
RMSEA	.11	.10
> .08 = mediocre fit		
> .10 = poor fit (Byrne, 2001)		
The Tucker-Lewis Index (TLI)	.84	.84
0 = poor fit		
Close to 1 = good fit (Arbuckle, 2003)		
The Comparative Fit Index (CFI)	.84	.85
0 = poor fit		
> .95 = good fit (Arbuckle, 2003)		

The EFA for NSCQ suggested that the nursing students' care self-concept might be problematic as half the number of the questions fell into other components (see table

4.13). Thus, the author of this research also conducted confirmatory factor analysis with both original and the hypothesized model.

In the original model, NSCQ CFA outcomes reveal $\chi^2 = 1011.7$, d.f. = 220 and fit indices of TLI = .84, CFI = .86, RMSEA = .11. The result suggests that NSCQ model fitted in the current study was on the broader line of the desired result because the RMSEA indices were slightly higher than .10, which indicates a poor fit. Yet, TLI and CFI were acceptable (see table 4-15).

In the hypothesized model, the self-concept of care was labeled as ‘unidentified’ in Amos software, which indicates that this dimension should be excluded from the confirmatory factor analysis due to three out of six questions fell into other dimensions. After removing the dimension of care, the results of the model fit index are $\chi^2 = 1038$, d.f. = 246 and fit indices of TLI = .84, CFI = .85, RMSEA = .10 (see table 4-15).

4.3.2.3. *Consideration for multicollinearity*

At the measurement level of the factor structure, all the items present strong results (factor loadings > .5). As figure 4-6 shows, the loadings of the performance approach

goal ranged from between 1.00 and 1.10; mastery avoidance ranged from .86 to 1.05; mastery approach ranged from 1.00 to 1.08; and performance avoidance ranged from 1.00 to 1.98. As illustrated in figure 4-8, the loadings of general self-concept (GSC) ranged from .90-1.18; care ranged from between .58 and 1.0; staff relations (STAFF RELA) ranged from .75 to 1.12; communication ranged from .69 to 1.01; and knowledge ranged from .77 to 1.00. Some items contained a factor loading that was slightly greater than 1 in every subscale. It has been noted that this is not uncommon, especially when the subscales are correlated (Field, 2009), which is the case in the current research. It does, however, raise the issue of a high degree of multicollinearity (Jöreskog, 1999, p. 1). Multicollinearity refers to a strong, linear correlation ($r > .8$) and is observed between two or more variables (Field, 2009). For example, as figure 4-6 shows, a strong correlation existed between care and communication and such a relation might lead to false conclusions and interpretations. That is to say, although the literature suggests high self-concept of communication predicts a decent retention rate, one cannot assume the participants in the current study would have a good retention rate because their self-concept of communication is high because of ‘multicollinearity’. In the current study, the relation between communication and care was too strong, which may imply that the participants could not distinguish between the concept of

communication and care and they therefore saw these two subscales as similar concepts.

In addition to the poor model fit of the NSCQ, a high correlation and factor loadings were also found between the subscales of nurses' general self-concept (GSC) and care ($r = .80$) and between the subscales of care and communication ($r = .84$) (table 4-14).

As mentioned above, a correlation higher than .80 is a possible sign of multicollinearity, so a further test for detecting multicollinearity was conducted only for the NSCQ, specifically for the three subscales above: nurse general self-concept, care, communication. Two indices are able to provide the diagnosis of multicollinearity in the SPSS: One is the Variance Inflation Factor (VIF) and the other is Tolerance Statistics. It has been documented by Field (2009) that, if the average VIF is greater than 1, the regression results might be potentially biased (Bowerman & O'Connell, 1990) and that, if the largest VIF is greater than 10, the issue of multicollinearity is more likely to be confirmed (Bowerman & O'Connell, 1990). Moreover, the Tolerance Statistics that show below .1 also represent a high possibility of multicollinearity (Menard, 1995). The VIF value for NSCQ ranged from between 1.97 and 4.92, but did not exceed 10; and that the value of Tolerance Statistics ranged from .20 to .50. Based on the literature, the chance for multicollinearity to happen in NSCQ is relatively lower.

4.3.3. Results (Achievement goals)

Having established that the constructs within the instruments were statistically robust, the items within the construct were averaged to provide nine dependent variables. For the Achievement Goal Questionnaire, the four constructs were Mastery Approach, Mastery Avoidance, Performance Approach and Performance Avoidance. For the Nursing Self-Concept Questionnaire, there were five constructs, Nurse General Self-Concept, Caring, Staff relations, Communication, Knowledge. The next analysis examined each variable using a 3 x 2 MANOVA where Time was the three-level within-subject factor (Time 1 v Time 2 v Time 3) and Group was the two-level between subject factor (Experimental v Control). For clarity of presentation the results for each variable are presented in turn. In the following section, the statistical outcome of achievement goals and nurses self-concept will be reported respectively. Brief descriptive results and F score will be explained and more details will be illustrated for the variables with significant time by group interaction.

4.3.3.1. Research question (Achievement goals)

Research Question 1: How does the first time clinical placement affect Taiwanese students' achievement goals in their nursing module?

Hypothesis 0: The clinical placement makes no significant difference in achievement goals between the two groups

Hypothesis 1: The clinical placement causes significant difference in achievement goals between the two groups

Levene's test and Mauchly's test

Levene's test was also checked for any assumptions regarding the homogeneity of groups. The results indicated that no homogeneity assumption was violated as the p value for every goal was shown to be insignificant ($p > .05$). Mauchly's test was examined prior to the Manova test for the assumption of sphericity in repeated measure ANOVA as the literature has noted (Field, 2009); however, the results of Mauchly's test showed that the assumption of sphericity had been violated in the performance approach, $\chi^2(2) = 6.62$, $p > .05$, mastery avoidance $\chi^2(2) = 23.81$, $p > .001$, mastery approach $\chi^2(2) = 28.48$, $p > .002$, and performance avoidance $\chi^2(2) = 17.814$, $p > .05$. When the sphericity is violated, the choice of the degree of freedom should therefore be Greenhouse-Geisser's estimates of sphericity for the later Manova report.

Manova Analysis

The literature suggests that achievement goals, namely, mastery approach, mastery avoidance, performance approach and performance avoidance are conceptually correlated. A multivariate analysis of variance (MANOVA) was therefore utilised on

these variables across the control and experimental group. There was a significant multivariate time by group effect for achievement goals, Pillai's trace $V = 0.060$, $F(8, 267) = 2.13$, $p < .05$, partial eta squared .06.

4.3.3.2. Descriptive Results and F score in the AGQ. $N = 136$ (control group);

140(experimental group)

Table 4.16 Means and standard deviation for AGQ construct: the mastery approach goal

Group	T1		T2		T3		Marginal mean
Mastery Approach	M	SD	M	SD	M	SD	
Control	4.97	0.91	4.93*** ²	0.75	5.34*** ³	0.75	5.15
Exp	5.62*** ¹	0.93	5.26*** ²	0.73	5.54	0.75	5.47
Marginal mean	5.30		5.10		5.44		

* $p < .05$ ** $p < .01$ *** $p < .001$

¹ Significant difference between T1 and T2

² Significant difference between T2 and T3

³ Significant difference between T3 and T1

Table 4.16 suggests the means for the construct Mastery Approach. The means show that students in the Treatment condition were consistently more mastery orientated compared to students in the Control condition. This was reflected in a significant main effect $F(1, 271) = 27.89$, $p < .001$, partial eta squared .09. The means show that for the control group, the ratings went up from time 1 ($M = 4.97$; $SD = 0.91$) to time 3 ($M =$

5.34; SD = 0.75) but the experimental group's rating went down from time 1 (M = 5.62; SD = 0.93) to time 2 (M = 5.26; SD = 0.73), followed by an increase in time 3 (M = 5.54; SD = 0.75). This led to a significant main effect for Time $F(1.8, 228) = 19.9, p < .001$ partial eta squared .07. There was a significant interaction between Group and Time $F(2, 548) = 8.91, p > .001$ partial eta squared .03.

Simple effect revealed that significant differences occurred between time 2 and time 3 ($p < .001$) in the control group but in the experimental group, the differences happened between time 1 and time 2 ($p < .001$) and time 2 and time 3 ($p < .01$) (see figure 4.10).

The findings for mastery approach were in line with hypotheses that placements change achievement goals.

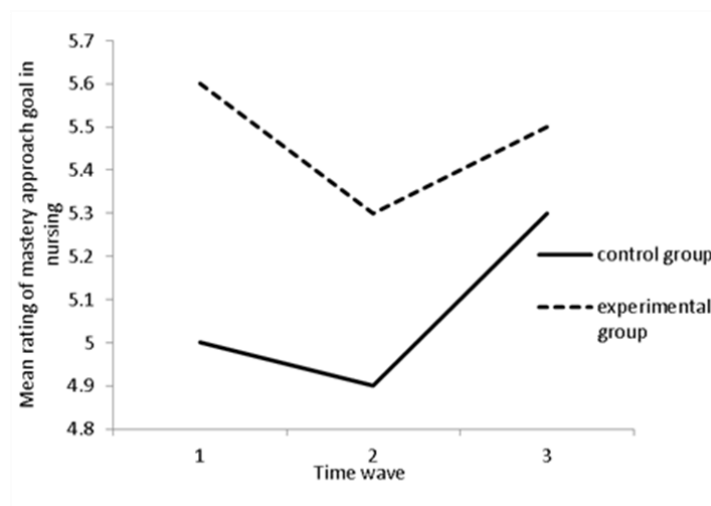


Figure 4-10 Mean rating of the mastery approach goal

Results

Table 4.17 Means and standard deviations for the AGQ construct: Mastery avoidance goal

Group	T1		T2		T3		Marginal mean	
Mastery Avoidance	M	SD	M	SD	M	SD		
Control	4.69	0.86	4.75	0.73	5.26*** ³	0.81	4.90	
Exp	5.24	0.97	5.09*** ²	0.77	5.43	0.76	5.25	
Marginal mean	4.97		4.92		5.35			

* $p < .05$ ** $p < .01$ *** $p < .001$

¹ Significant difference between T1 and T2

² Significant difference between T2 and T3

³ Significant difference between T3 and T1

Table 4.17 details the means for the construct mastery avoidance. The means show that students in the Treatment condition had higher mastery avoidance goal compared to students in the Control condition. This was reflected in a significant group effect $F(1, 274) = 21.67, p < .001$, partial eta squared .07. The means also indicate that both the groups, the ratings increased time 3. This led to a significant main effect for Time $F(1.8, 243) = 34.6, p < .001$ partial eta squared .11. Although there was significant time by group interaction in mastery avoidance, the simple effect showed the difference appeared in T2 and T3 for the both groups and it did not match the aim of this research, which aimed to investigate the difference before and after the placement. The change between T2 and T3 is used to follow up if there is significant result in T2 The findings for mastery avoidance were not in line with hypotheses that placements change

achievement goals.

Table 4.18 Means and standard deviations for the AGQ construct: Performance approach goal

Group	T1		T2		T3		Marginal mean
Performance approach	M	SD	M	SD	M	SD	
Control	4.33	0.99	4.39	0.81	4.54* ³	0.97	4.42
Exp	4.60	1.07	4.61	0.80	4.71	0.87	4.64
Marginal mean	4.47		4.50		4.63		

* $p < .05$ ** $p < .01$ *** $p < .001$

¹ Significant difference between T1 and T2

² Significant difference between T2 and T3

³ Significant difference between T3 and T1

Table 4.18 shows the means for the construct Performance Approach. The means show that students in the Treatment condition were consistently more performance approach orientated compared to students in the Control condition. This was reflected in a significant group effect $F(1, 274) = 5.03, p < .05$, partial eta squared .02. The means also show for the control group, ratings went up from time 1 ($M = 4.33$; $SD = 0.99$) to time 3 ($M = 4.54$; $SD = 0.97$), however the means of the experimental group suggest they were stable in this current study. This resulted in a significant main effect for Time $F(1.9, 172) = 6.6, p < .01$ partial eta squared .01. There was not a significant interaction between Group and Time. The findings for Performance Approach were not in line with

hypotheses that placements change achievement goals.

Table 4.19 Means and standard deviations for the AGQ construct: Performance avoidance goal

Group	T1		T2		T3		Marginal mean
Performance avoidance	M	SD	M	SD	M	SD	
Control	3.82	1.10	3.93	0.94	3.83	1.09	3.86
Exp	3.89	1.18	4.00	1.04	3.95	1.01	3.95
Marginal mean	3.86		3.97		3.89		

Table 4.19 shows the means for the construct performance avoidance. The means outline that there was no obvious change in the both group from time 1 to time 3. This was reflected in a non-significant effect in group and time. The findings for performance avoidance were not in line with hypotheses that placements change achievement goals.

4.3.3.3. Summary of findings for achievement goals

Overall, while most of the achievement goal remained stable before the placement (T1) and after the placement (T2) the clinical placement, the mastery approach goal was the

only goal that revealed meaningful difference between the control and the experimental group. The experimental group' mastery approach goal declined after the placement, however, the decline was temporary because their approach goal rose again in T3 when they returned to the classroom.

4.3.4. Results (Nurses' Self-Concept)

4.3.4.1. Research question (Nurses' self-concept)

How does the first time clinical placement affect Taiwanese student nurses' self-concept (NSCQ)?

Hypothesis 0: The clinical placement makes no significant difference in nurses' self-concept between the two groups

Hypothesis 1: The clinical placement makes significant difference in nurses' self-concept between the two groups

Levene's test and Mauchly's test

Leven's test revealed insignificant results for every subscale in the Nurses' Self-Concept Questionnaire ($p < .05$), implying that the assumption of homogeneity is not violated and, therefore, that an analysis of Manova can be processed. Mauchly's test indicated that the assumption of sphericity had been violated in care, $\chi^2(2) = 13.59$, $p < .01$, staff relations $\chi^2(2) = 6.34$, $p < .05$, and communication $\chi^2(2) = 9.28$, $p < .05$. As mentioned previously, when the assumption of sphericity is violated, one should choose

the degree of freedom based on Greenhouse-Geisser estimated for the Manova report.

Manova Analysis

In that the variables of nurses' general self-concept, self-concept of care, staff relations, communication and knowledge are likely to be correlated. Thus, a multivariate analysis of variance (MANOVA) was conducted on these variables across the control and experimental group.

Using Pillai's trace, there was not a significant time by group effect on nurses' self-concept, $V = 0.063$, $F(10, 265) = 1.78$, $p > .05$. However, separate univariate ANOVAs on the outcome variables revealed significant time by group effect on self-concept of staff relations, $F(1.9, 164) = 6.39$, $p < .01$ partial eta squared .02 while no meaningful effect appeared in other self-concept subscales. The effect of time and group will be detailed for each variable in the next section.

4.3.4.2. Descriptive Results and F score in the NSCQ. N=136 (control group); 140 (experimental group)

Table 4.20 Means and standard deviations for the nurses' self-concept construct: nurses' general self-concept

Results

	Group	T1		T2		T3		Marginal mean
Nurses' general self-concept		M	SD	M	SD	M	SD	
	Control	5.84	1.02	5.79	0.96	5.78	0.93	5.80
	Exp	5.68	1.16	5.82	0.84	5.80	1.08	5.77
	Marginal mean	5.76		5.81		5.79		

Table 4.20 shows the means for the construct nurses' general self-concept. The means show that students in the both groups had similar score and did not change significantly from time 1 to time 3. Thus, there was no obvious effect in time and group. The findings for nurses' general self-concept were not in line with hypotheses that placements change nurses' self-concept.

Table 4.21 Means and standard deviations for the nurses' self-concept construct: care

	Group	T1		T2		T3		Marginal mean
Care		M	SD	M	SD	M	SD	
	Control	5.40**1	0.84	5.60**2	0.77	5.40	0.78	5.47
	Exp	5.25**1	1.01	5.54	0.78	5.38	0.93	5.39
	Marginal	5.33		5.57		5.39		

Results

mean
* $p < .05$ ** $p < .01$ *** $p < .001$
¹ Significant difference between T1 and T2
² Significant difference between T2 and T3
³ Significant difference between T3 and T1

Table 4.21 explains the means for self-concept of care. The means imply that students in the control group consistently scored higher compared to students in the experimental group. The means also show that for the control group, the score rose from time 1 ($M = 5.40$; $SD = 0.84$) to time 2 ($M = 5.60$; $SD = 0.77$) and time 3 ($M = 5.40$; $SD = 0.78$) and the experimental group's score inclined only in time 2 ($M = 5.54$; $SD = 0.78$). There was not a significant effect for group or time by group interaction. The findings for care were not in line with hypotheses that placements change students' nurses' self-concept.

Table 4.22 Means and standard deviations for the nurses' self-concept construct: staff relations

Group	T1		T2		T3		Marginal mean
Staff relations	M	SD	M	SD	M	SD	
Control	5.70	0.78	5.47	0.78	5.59	0.77	5.59
Exp	5.46** ¹	0.86	5.75	0.77	5.66* ³	0.89	5.62
Marginal mean	5.58		5.61		5.63		

* $p < .05$ ** $p < .01$ *** $p < .001$

¹ Significant difference between T1 and T2

² Significant difference between T2 and T3

³ Significant difference between T3 and T1

Table 4.22 suggests the means for self-concept of staff relations. The means indicate

that students in the control group remained stable from time 1 to time 3 while the experimental group had an incline in time 2 ($M = 5.75$; $SD = 0.77$). This was reflected in a significant time effect $F(1.9, 522) = 6.89$, $p < .01$, partial eta squared .03. There was no significant effect for group but a significant interaction between group and time was observed $F(1.9, 164) = 6.39$, $p < .01$ partial eta squared .02.

Simple effect suggested the control group had no differences in time from time 1 to time 3 but the experimental group appeared to show obvious differences in between time 1 and time 2 ($p < .01$) (see figure 4.11). The findings for staff relations were in line with hypotheses that placements change nurses' self-concept.

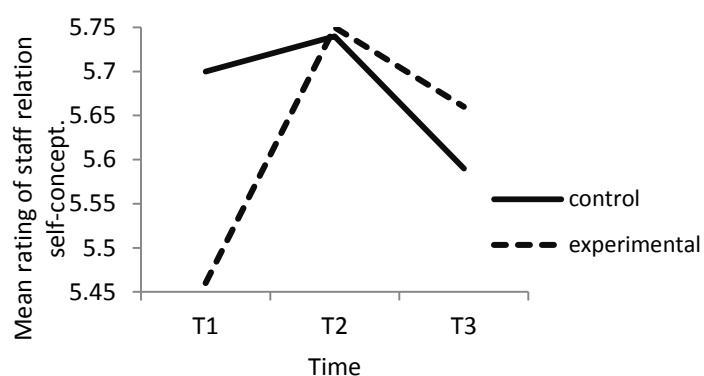


Figure 4-11 Mean rating of self-concept of staff relations

Table 4.23 Means and standard deviations for the nurses' self-concept construct: communication

Group	T1	T2	T3	Marginal
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Results

								mean
Communica tion		M	SD	M	SD	M	SD	
	Control	5.35* ¹	0.83	5.50* ²	0.83	5.32	0.80	5.39
	Exp	5.11** ¹	0.98	5.36	0.89	5.21	1.07	5.23
	Marginal mean	5.23		5.43		5.27		

* $p < .05$ ** $p < .01$ *** $p < .001$

¹ Significant difference between T1 and T2

² Significant difference between T2 and T3

³ Significant difference between T3 and T1

Table 4.23 shows the means for self-concept of communication. The means show that students in the control group had higher score from time 1 ($M = 5.35$; $SD = 0.83$) to time 3 ($M = 5.32$; $SD = 0.80$) compared to students in the experimental group. This was reflected in a significant main effect from time $F(2, 530) = 9.59$, $p < .001$, partial eta squared .03 but not for group. There was not a significant interaction between Group and Time. The findings for communication were not in line with hypotheses that placements influence nurses' self-concept.

Table 4.24 Means and standard deviations for the nurses' self-concept construct: knowledge

								Marginal mean
Knowledge	Group	T1	SD	T2	SD	T3	SD	
	Control	5.82	0.77	5.77	0.75	5.78	0.71	5.79
	Exp	5.70	0.88	5.79	0.71	5.80	0.79	5.76
	Marginal mean	5.76		5.78		5.79		

Table 4.24 shows the means for self-concept of knowledge. The means imply both groups held similar scores for knowledge and did not change during the study. The effect for time and group were therefore not significant. The findings for knowledge were not in line with hypotheses that placements influence nurses' self-concept.

4.3.4.3. Summary of findings for nurses' self-concept

Overall, the participants did not change their self-concept of nurses' general self-concept and knowledge regardless of groups. Both groups increased their self-concept of care and communication during the research period. Based on these result, the influence of clinical placements on these self-concept subscales are unclear. However, this research demonstrated that clinical placements facilitate students to develop relations with staff.

4.3.5. The prediction of the mastery approach goal on staff relations

4.3.5.1. Research question

Whether the mastery approach goal predicts students' self-concept of staff relations?

Hypothesis 0: there is no significant difference between the control and experimental groups regarding how much mastery approach goal is able to predict self-concept of

staff relations.

Hypothesis 1: there is a significant difference between the control and experimental groups regarding how much mastery approach goal is able to predict self-concept of staff relations.

4.3.5.2. Examine the correlation and whether the mastery approach goal predicts staff relations self-concept

The result is consistent with the alternative hypothesis that states there is a positive relation between the mastery approach goal and staff relations self-concept and the mastery approach goal predicts interpersonal relations. There was a significant positive relationship between the mastery approach goal and staff relations self-concept in the control group, $r = .40$, $p > .001$ and in the experimental group $r = .22$, $p > .01$. This outcome only explains that there was a positive correlation between the two constructs; however, there is no information about the direction about whether the mastery goal predicts staff relations or the other way around. A simple linear regression was calculated to predict students' staff relations self-concept based on their mastery approach goal. The group difference was the main focus of this thesis, so the analysis was individually conducted for the control and experimental groups. In the control group, a significant regression equation was found: $F(1, 134) = 16.13$, $p < .001$, with an R^2 of .11. In the experimental group, a significant regression equation was also found

to be meaningful: $F(1, 65.9) = 6.42, p < .05$, with an R^2 of .04. The value R^2 in this case referred to 11% of the variance in staff relations self-concept and can be explained by one's mastery approach goal, but only 4% of this variance can be similarly explained in the experimental group. The R^2 value in the experimental group implied that 96% of the variation in staff relations cannot be explained by students' mastery approach goal, which suggests that in the current study, the mastery approach goal was not able to predict students' interpersonal relation.

Chapter 5 Discussion

5.1. Introduction

This research investigated the significance of student nurses' first placement experiences on their achievement goals and self-concept; which is of interest to educational researchers and practitioners within both psychology and nursing professions. This discussion chapter attempts to expand the findings of the original three questions posed by this research with supporting evidence.

The finding that clinical placements decreased students' mastery approach goal whilst improving students' self-concept of staff relationships supported the hypothesis that placements do affect self-concept and achievement goals. In contrast with the original hypothesis, mastery approach goal did not predict interpersonal relations. One explanation may be that inadequate feedback from teachers might lead to the loss of mastery approach goal as learners were unable to reflect on their learning and the link between tasks and self-relevance. This can be attributed to the theory-practice gap in a clinical learning setting.

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The results showing an increase in self-concept for staff relations after placement are explained theoretically by the Hierarchical Structure of Intelligence (Cote & Miners, 2006) and the importance of sense of belonging (Levett-Jones & Lathlean, 2008) in community of practice (Wenger, 2000). Nursing students felt successful by applying emotional intelligence in the workplace despite still lacking professional knowledge and skills, meaning students pay more attention to understand their own and staff's emotions and deal with these emotions sensibly, for example, demonstrating empathy in order to have beneficial collegial relations (Freshwater & Stickley, 2004). Nursing is an example of a community of practice (Wenger, 2000), which indicates that learning happens when interacting with the community members. Thus by being accepted by the medical team, the students obtained more learning opportunities and a greater sense of accomplishment. This study also showed that using mastery approach goals to predict interpersonal relations was not as effective as the literature implied, due to the lack of this acceptance.

The final section of this chapter considers the implications of the study, limitations and suggests directions for further research.

5.2. Background information reminder

The current shortages and continuing deterioration in the nursing workforce and the difficulties of nursing recruitment has been well-documented (see 1.1 for details). Empirical studies have outlined that the shortage problem is associated with job satisfaction and nurses' low self-concept. Nursing students' attrition is published as being due to negative experiences in relation to clinical placement. Placements can offer an effective environment in which student nurses can learn, however, it also influences their self-concept and achievement goals. Nurses' self-concept and achievement goals develop during their experiences within the working environment and goes on to affect their interaction with colleagues and interpretation of given tasks.

At present, the research on this subject has been limited to senior nursing students and new nurses so there is limited research on how novice nursing students have responded to first-time placements. Self-concept and achievement goals are part of an on-going process so it is necessary to monitor these aspects from the start of their development. Therefore, data and analysis of responses given by novice students placed within hospitals was provided as part of this research topic. This informs nursing researchers

how students' self-concept and achievement goals change over time. Conducting studies on this specific topic and in this context enhances the understanding of the effectiveness of nursing placements and can give rise to solutions with which to tackle current and future shortages within the nursing profession.

5.3. Research questions, general findings, and main arguments

5.3.1. Achievement Goal Theory

How does the first time clinical placement affect achievement goals' change and stability in the nursing module?

The ultimate purpose of this research was to identify and quantify the implications behind goal stability or changes, to assist in determining the issues arising and effectiveness of placement training. The results of this study revealed that:

- 1) The mastery approach goal declined during the placement and increased after students returned to the classroom;
- 2) Other achievement goals remained stable.

Based on the findings from this study, the decline of mastery approach goal implied a loss of learning interest and desire for mastery learning, which was affected by the learning

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environment. Inadequate constructive feedback has been cited as one of the main reasons for students losing interest in learning (Jang, Reeve, & Deci, 2010).

The stability of the performance goal in the current study was attributed to students being unwilling or unable to demonstrate their ability in a performance-oriented context. The students' lack of performance goals was due to students being unable to identify their own improvement because of the challenges faced in Problem-Based Learning (PBL) and the theory-practice gap in a clinical setting.

Because during the first time placement, nursing students do not have enough competence or experience, it was unlikely that they would have felt any great sense of accomplishment. According to the theory of a need for achievement (McClelland et al., 1953), every individual has the expectation to do something better or faster than anybody or better than the person's own earlier accomplishment (Hansemark, 2003, p. 302). It is possible that nursing students seek the feeling of achievement from other places such as better staff relationships rather than improvements in nursing practice, as suggested by the results of this research.

5.3.2. Nurses' Self-concept

How does the first time clinical placement influence student nurses' self-concept?

The results showed that the dimension of staff relations was the only self-concept subscale increased after the placement. The remaining subscales of nurses' self-concept: general nurses' self-concept, caring, communication, and knowledge showed no significant changes after the placement. Such an outcome suggests that nursing students during this stage may gain more confidence being able to interact with other staff and see establishing good relations with staff as more important than the actual act of learning about nursing practice. Students' self-concept of nursing care and knowledge and their performance approach goal were stable, indicating that students did not feel more confident about their nursing competence and knowledge after the placement and had no obvious desire to demonstrate nursing skills. In this discussion, explanations will be offered as to why students gain more confidence in staff relations with staff during the placement. The possible reasons include the theory of compensation of cognitive intelligence and the importance of a sense of belonging within the learning process for nurses.

5.3.3. The mastery approach goal and social interaction

Is mastery approach goal able to predict students' relations with staff?

This question combines achievement goal theory and nurses' self-concept, especially the staff relations dimension, as mastery approach goal is able to predict an individual's interpersonal relations in the workplace (Darnon et al., 2007; Janssen & Van Yperen, 2004). It was hypothesized that because individuals with mastery approach goal focus on mastering learning rather than competing with others, they were likely to have better relations with colleagues because good relations help them gain more learning resources (Darnon et al., 2007; Janssen & Van Yperen, 2004). However, the findings from the study in this thesis suggest that students' mastery approach goals did not reflect their relations with staff. This implies, at this stage, that their purpose in bonding with staff was not for learning interests or to master materials. Several alternative reasons for developing relations with staff are outlined in the next section.

5.4. Discussion of achievement goals change and stability

The following discussion on achievement goals are divided into 2 parts:

- 1) Why students' mastery approach goal declined during clinical placements?
- 2) Why students' performance goals remained unchanged after the placement?

5.4.1. Why clinical placements decline students' mastery approach goal?

Inadequate constructive feedback during the placement leads to the loss of the mastery approach goal

The loss of the mastery approach goal indicates that clinical placements possibly undermine students' learning interests and desire for mastery learning in nursing. Such a finding can be the result of the combination of a high anxiety environment and a lack of constructive feedback for students. It has been identified that a stressful learning environment is harmful to the development of intrinsic motivation and mastery goal (Ames, 1992). Yet, stress is a primary characteristic of clinical jobs and it therefore seems inevitable that students will make mistakes during placements. The most important support that nursing educators can offer to students is their feedback which enables students to learn from their mistakes. Nevertheless, empirical studies have pointed out that the quality of feedback given to nursing students during clinical learning is rather inadequate. It has been reported that clinical teachers need to improve the quality of their feedback by providing more constructive information (Chen & Lee, 2000). For example, only two out of ten clinical teachers were able to offer feedback that motivates students' reflection on their own learning (Hsu, 2006). Hsu's study

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(2006) specified that most clinical teachers give feedback based on the results of students' performances, but that the guidance for self-monitoring, reflection, and deep information processing are often missing in the feedback. By failing to provide chances for students to reflect on their learning, it is difficult for them to see the link between the task and self-relevance, which consequently undermines students' mastery goal development (Ames, 1992). Lack of reflection also increases learning difficulties when the theory-practical gap exists. In the following sections, the importance of reflection in nursing education will be addressed and discussed in relation to its function in closing the theory-practice gap.

Supervision within a reflective process has been emphasised as an effective means of clinical learning because it helps students make the most of their feedback for self-monitoring, which later relates to professional development. In addition, a study by Lau, Chuk, and Wei So (2002) claimed that the advantages of reflective teaching benefit not only trainees, but also clinical teaching staff. Lau and colleagues elaborated that, by helping students reflect, teachers also have an opportunity to clarify and extend their own knowledge, which will in turn support students better in the future. A study by

Fowler and Chevannes (1998) suggested, however, teaching with reflection has to be introduced to students with caution because it is not always suitable for novice nursing students. During the early stages of learning, novice students need clear instructions and explicit explanations otherwise they feel anxious as they do not have enough knowledge to reflect on their own learning (Fowler & Chevannes, 1998).

5.4.2. Why students' performance goal remain unchanged after the placement?

The theory-practice gap and Problem-Based Learning does not always

facilitate the performance goal in a performance orientated learning context

5.4.2.1. The theory-practice gap

The theory-practice gap provides an explanation for why nursing students do not increase their desire to demonstrate their nursing skills. The theory-practice gap is common among students in medical professions and it has been identified as an 'on-going problem' when novice nurses try to integrate their textbook knowledge into the practice of the wards (Scully, 2011, p. 93). This distance between theory and practice emerges due to students' inability to synchronize their theoretical knowledge with the procedures carried out in actual practice (Scully, 2011). Learning during nursing placement therefore becomes more challenging than learning in the classroom. In the

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classroom, students are taught theory and the generic skills of nursing; however, theory and generic nursing practice could be seen as outdated or too general to be applied in a content specific situation. That is to say, even in a performance focused environment like hospitals, the theory-practice gap does not improve students' perceived competence because what they have learnt in classroom is not always adequate to help their patients. This offered an explanation for why nursing students' performance approach goal did not change in a learning environment where performance and evaluation is strongly emphasised.

5.4.2.2. Learning with reflection is the way to fill the gap, but students do not have enough skills to do so

Nursing researchers have found that students' reflection on their own learning effectively helps to connect the theory and practice. Reflection skills not only bridge the theory-practice gap (Scully, 2011); they also lead to the development of solid professional knowledge (Benner, Tanner, & Chesla, 2009), as well as better nursing practice (Gustafsson & Fagerberg, 2004). It is therefore essential for nursing students to acquire the ability to cohere what they learn in theory and practice because such a skill represents one of the core values and a primary learning aim of nursing training

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(Hatlevik, 2012). While nursing researchers emphasise the function of reflective skills, these skills are also considered to be the most challenging part for learners because the transference process may vary according to the nature of the subjects and the culture of the working environment.

The process of gaining reflective skills is challenging and time consuming. It has been attributed to students' incompetence and attitude towards theory learning and inadequate guidance from teachers. These factors have made it difficult for novice nursing students to acquire the necessary reflective skills. Some empirical studies are addressed herein.

It is difficult for novice nursing students to have such reflective competence during their first few placements (Pai, 2015) because the development of reflection is not an easy process. Relevant studies claim that the development of reflective skills has to be established based on a proficient understanding of theory and adequate clinical experience. This facilitates students to reflect on their learning during clinical practice in order to bridge the theory-practice gap (Tuomi-Gröhn & Engeström, 2003). In Pai's

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study in Taiwan (2015), learning reflective skills takes time, as studies have demonstrated that students' reflective skills would not show significant improvement until the sixth month of clinical training. Pai's results support the idea that students' reflection only takes place when they have a certain level of knowledge and experience (Tuomi-Gröhn & Engeström, 2003). As a result of these preconditions needed to acquire adequate reflection skills, it is not surprising to find that reflection skills are one of the least frequently applied skills among undergraduate students in health majors (Kember et al., 2000).

Another factor that may contribute to junior students struggling to gain reflection skills is the attitude towards theory learning and teachers' support. Students' perception of theory alters while they are advancing through the programme and such change has been claimed to influence reflective skills. For example, junior nursing students reported that they feel theory learning is 'dry, irrelevant and boring', but senior students think theories are 'useful, enjoyable and inspiring' (Hatlevik, 2012, p. 870). After accumulating knowledge and experience, the senior nursing students could shift towards a more positive perception of theory, so that they are more motivated to increase the desire to merge the theory and the practice (Tuomi-Gröhn & Engeström,

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2003). In addition, clinical teachers also play an important role in students' acquisition of reflective skills. Empirical studies have revealed that not all clinical teachers are aware of how to motivate and guide students in the reflective process during nursing practice (Milner, Estabrooks, & Myrick, 2006). This is also the case for some Taiwanese clinical teachers; as previously mentioned, it was observed that teachers tend to ask memorized questions (Hsu, 2006) and that a relatively low number of teachers are able to provide feedback that actively improved students' reflection process (Chen & Lee, 2000; Hsu, 2006).

Given that time and experience are prerequisites of reflective skills development, it is logical that nursing students who attend the first time placements encounter the confusion that arises from the gap between theory and practice. In the current study, as participants only had a placement for four weeks, it is unlikely that students learned reflective skills from their practice in such a short time. Students' inadequate knowledge limits their chances of beneficially reflecting on their learning so students did not feel they have gained substantial improvement in nursing skill. Under this circumstance, it is unlikely to observe significant increase in students' self-efficacy and perceived competence. The literature explains that performance goal is positively

related to students' efficacy and their perceived competence (Jang et al., 2010; Law, Elliot, & Murayama, 2012). To sum up, in a performance-focused environment, lack of reflective skills may explain why the participants in the current study were unable to perceive the improvement of nursing skill so their desire to demonstrate ability or outperform others did not show significant change after the placement.

5.4.2.3. Problem Based Learning (PBL) in clinical environment makes learning unpredictable and less straightforward

A clinical environment did not improve the students' performance and their confidence in their nursing competence. The fact that, in the current study, students' mastery approach goal was influenced to change by the clinical placements suggested that achievement goals can be altered, even only temporarily. If this is the case for the mastery goal, the change of the performance goal should have been observed too because the main purpose of clinical learning is to offer students opportunities to perform and students should be more focused on attaining normative performance in a performance-focused environment (Law et al., 2012, p. 806). Nevertheless, in the current study, there was no meaningful change found in students' performance approach goal or in their professional self-concepts of caring, communication, and

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knowledge after the placement. These outcomes indicate that students have neither the desire to demonstrate their nursing skills nor to improve their professional confidence.

In most of the nursing training, Problem-Based Learning (PBL) is the most popular approach because of its positive influence on students' learning. PBL was originally designed for medical schools, but has now become an internationally adopted teaching method for different disciplines (Alavi, 1995). Before introducing PBL, the feature of learning in the workplace should be briefly mentioned again. As noted in the literature, learning in the workplace is not easy because students have been used to sitting in a classroom and learning in a formal way. Learning in the workplace is largely informal because it does not always follow the textbook; learning has to be adjusted in accordance with real situations, so learning in such a context is not always predictable (Hager, 1998). Without predictable learning instructions, the learning outcomes are consequently implicit and vague (Eraut, 2004). With the change in a learning context, students who are new to the workplace often find themselves struggling to demonstrate their context-specific knowledge and skills which are considered to be unsystematic and fragmented when learning them (Hager, 1998). These features can also be found in

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PBL because the learning aims and outcomes of PBL are often considered to be 'ambiguous' (Barrow, Lyte, & Butterworth, 2002, p. 55). The participants in the current study encountered their learning in the workplace for the first time through the PBL approach, which made the challenges they faced during placement more foreseeable. One possible explanation why placement makes learning more difficult for the students is the implicit learning outcomes in problem-based learning in the workplace that makes students unaware of their progress, although they might have improved in some ways.

PBL not only develops students' skills and knowledge for practical use, but also their deep learning process. For practical improvement, nursing students' reported (Cooke & Moyle, 2002) that they feel great engagement with a clinical situation because PBL requires them to connect their nursing plans (theory) with patients by considering all the conditions of reality (practice). Connecting theory and practice makes nursing care more holistic; for instance, planning the dietary requirements of patients who have had a major surgery also often requires the consideration of their religion. In Taiwan, some people become vegetarians for religious reasons, so they are strictly forbidden to eat meat. If a nurse provides a dietary plan that only includes meat without asking about their dietary restrictions, he or she does not demonstrate holistic nursing practice.

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Students also find themselves taking the initiative in their own learning, thereby improving self-direction and learners' autonomy. Taking charge of personal learning is essential to developing deep learning, which means learning is not limited to surface skills but also focuses on the learner's mind. PBL offers an integrative learning process that prompts students' clinical reasoning response in real clinical situations because nursing students are asked to solve problems based on valid rationales when making a decision. The more practice they have in justifying their own decisions, the quicker their critical thinking is developed. Critical thinking is now at the centre of nursing education and often mentioned as an important outcome in PBL (Hung, Tang, & Ko, 2015; Pitt et al., 2015). This is because critical thinking supports learners' integration of previous experience and current practice with valid rationales, which encourage a deep information process in PBL that includes more extensive use of learning strategies, self-monitoring, and knowledge integration (Cooke & Moyle, 2002).

Despite the strength of Problem-Based Learning (PBL) being well-documented by the literature (Cooke & Moyle, 2002), there are still studies that point out that PBL is not always as supportive as the literature suggests, especially for the novice. For the

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participants in the current study, one of the biggest challenges for them was learning in hospitals for the first time. The students may not discover the advantages of PBL within a four week placement, since it is a time consuming learning process. The author proposes that the barriers that nursing students encountered in PBL is the reason why they did not increase their performance approach goal, because they did not feel they had learned much. It has been pointed out that PBL does not always provide explicit learning outcomes. As described by Barrow et al. (2002), PBL has a ‘deliberately ambiguous nature of the scenario and the requirement is upon students to direct their own learning’ (p.55), which may cause students anxiety and stress, especially for the novice. For example, although some students agree that there are advantages of PBL, some still reported the beginning of the training confusing: ‘there was about a month when we did not know what we were doing [...]’ (Barrow et al., 2002, p. 58). This feeling of uncertainty not only increases learning anxiety, but it also prevents students from seeing their improvement because the learning outcomes were not straightforward enough. Students’ feelings of ‘being lost’ within an ambiguous and implicit learning process are therefore understandable. PBL offers students a wide range of medical cases but novice trainees cannot comprehend them due to their lack of knowledge and experience (Andrews & Jones, 1996; Ryan, 1997).

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This section has focused on after the nursing placement, to ask why students' mastery approach goal decreased and performance did not change at all. The author suggests that the inability to receive feedback that helps reflective learning is the main reason for the loss of interest and mastery learning. Regarding reflective learning, students did not have any desire to perform or to increase their professional self-concept. Learning in hospitals exposed students to a great number of challenges because, as junior nurses, they did not have the adequate experience and reflection skills to bridge the theory-practice gap. In addition to this, problem based learning (PBL) is efficient for learning only when students accumulate more knowledge and practical experience. For the participants in this research, it is likely that they were unable to identify much of their progress and often felt frustrated because of feelings of uncertainty and a fear of failure.

5.5. Discussion of change of nurses' self-concept

This part of the discussion elaborates why whilst in the placement, students prioritized their collegial relations.

5.5.1. Students' priority during placements

Students prioritize their relations with staff in order to compensate for their lack of cognitive intelligence and to seek a sense of belonging.

In the investigations on students' nursing self-concept before and after the placement, the results showed that students only increased their confidence in staff relations, while other dimensions, such as care, communication, and knowledge, showed no change.

This result indicates that, during the placement, students established good relations with staff and felt confident about their relationships, but that they did not feel confident about their professional performance after the placement. This outcome echoes the result from the achievement goals elements in the study in which the participants lost mastery learning and did not change their desire for demonstration in a performance-focused learning setting. These findings also implies that they did not gain confidence from nursing practices. According to the theory of the need for achievement (McClelland et al., 1953), if students were unable to feel professional achievement, it is reasonable for them to seek achievement from places other than nursing practices. From the results revealed in this study, it is possible that the participants were keen to connect with staff to gain a sense of achievement and for a learning purpose because

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observing staff is considered effective learning and having positive relations with staff members can be seen as one form of success.

Before the discussion of the importance of a sense of belonging to nursing students, the different conditions between the experimental and the control groups need to be addressed again as a reminder. The main difference between the control and experimental groups was that the students in the control group did not undertake placement and instead had lecture-based sessions in the classroom during the research period, but the experimental group went for placement before the survey was administered at Time 2. The research results suggest that the experimental group showed a significant decline in the mastery approach goal during the placement, but that they became more confident and positive when approaching staff, while the control group remained unchanged. It is suggested that it was the lack of a sense of belonging that led to the decline in the experimental group's learning interests in the first placement and that the participants were determined to improve their relations with staff to learn more and feel accomplishment. Given that one group was learning in a familiar environment while the other was not, the discussion can now focus on the impact of inadequate sense of belonging on learning. In the current research, it was easier for the

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control group to feel accepted and focus on learning without other concerns because they were with fellow classmates and teachers all the time. On the other hand, the experimental group undertook placements in hospitals as novices and as outsiders; therefore they needed to spend time seeking a sense of belonging before they started to learn. The next section will explain how sense of belonging is seen as a learning prerequisite in nursing education.

5.5.2. The importance of sense of belongingness

The first step for staff relations development is to gain a sense of belonging which is a prerequisite of nursing learning

5.5.2.1. Overview of a Sense of Belonging

Maslow's theory of hierarchy of needs (Maslow, Frager, Fadiman, McReynolds, & Cox, 1970) has demonstrated the importance of being accepted in order for an individual to move up to the next level of the need hierarchy, namely, self-actualization (see figure 5.12). Maslow et al. (1970) also proposed that a sense of being accepted is a prerequisite of self-esteem because one cannot establish self-esteem if one experiences exclusion from a particular group (Leary et al., 2001). It should be noted, however, that the research outcomes of Maslow's need hierarchy were mostly based on

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clinical settings; as a result, more empirical evidence is needed (Baumeister & Leary, 1995).

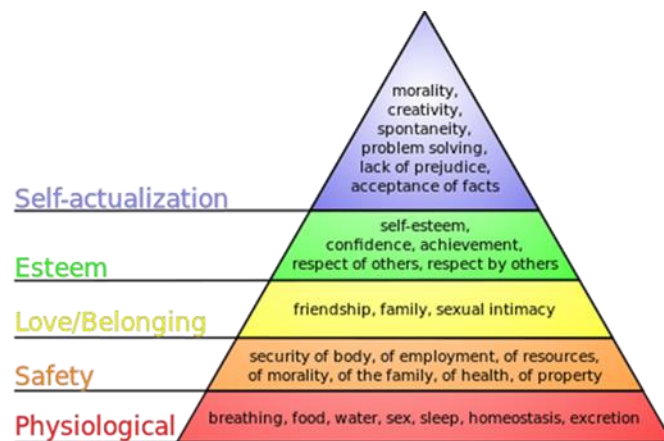


Figure 5. 12 Maslow's need hierarchy(1970)

Humans value a sense of being accepted by others so much so that in extreme cases, some people can lose their judgment. It is common to see a teenager learn to smoke in order to be accepted by friends (Clark, 1991). Similar behaviour has been observed among nursing students where some trainees blindly obey staff commands or sacrifice their learning opportunities to help more experienced staff in order to gain acceptance from them (Bradby, 1990).

A sense of belonging in the nursing profession has been specifically outlined by Levett-Jones and Lathlean (2008), as being a deeply personal and contextual experience that

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involves responses to the degree to which an individual feels (a) secure, accepted, included, valued, and respected by a defined group; (b) connected to or integrated with the group; and (c) their professional and/or personal values are in harmony with those of the group.

5.5.2.2. Why do students seek a sense of belonging?

A sense of belonging has been described as a learning prerequisite in nursing education (Levett-Jones & Lathlean, 2008). It is proposed that junior nursing students, with their lack of competence, are keen to seek a sense of belonging from the team so they can prepare themselves to learn from staff. Various results arising from this research indicate that students have a lack of knowledge and skills, so the placement did not help students to improve professionally. The participants did understand that the aim of the placement was to learn what classrooms cannot offer, but their learning outcomes from the placement were not desirable. This is why they tried to find alternative learning sources. Students were aware that clinical teachers are not the only people from whom they can learn; instead, staff can be an even better learning source. This is because nursing students see staff as role models and as future tutors and colleagues, so they have a stronger motivation to bond with them. If nursing students fail to be accepted by

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staff, they will experience difficulties in learning and be unable to see the value of this profession.

5.5.2.3. A sense of belonging is a prerequisite to nursing learning

Levett-Jones and Lathlean (2008) explained that gaining a sense of belonging enables students to learn more from staff because students are more motivated and self-directed to learn and more confident to ask questions and negotiate their own ideas with staff. To be a successful nurse, being self-directed and confident enough to ask questions are essential qualities. In a ward that offers a safe, welcome, and friendly environment, the quicker the students acquire a sense of belonging, the earlier they will be ready to learn. However, if a ward is unable to make students feel accepted from the beginning, students need to spend more time working on being accepted instead of learning the necessary nursing practices.

In the current study, it is understandable that students wanted to establish relations with staff because this granted them more confidence to communicate with staff and ask relevant questions. One possible reason that students prefer staff to teachers is that the

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teachers take the main responsibility of students' learning and answer students' questions, but, at the same time, the teacher is also the evaluator. This makes students see help-seeking with teachers as a threat because asking questions can be a sign of incompetence (Ames, 1983; Nicholls, 1984) and they may worry about being failed if they ask a teacher too many questions. The literature has suggested that, when students feel threatened or worried, they avoid seeking help (Karabenick & Knapp, 1988). Moreover, a study reported that a hierarchical factor also determines who students turn to when they need help (van der Rijt et al., 2013). For example, in order to avoid the risk of being evaluated or seen as incompetent, people tend to turn to 'socially proximate others' for advice (Bamberger, 2009). In the context of this study, in comparison to clinical teachers, staff are more likely to be nursing students' 'socially proximate others' with whom students also feel safer asking questions because staff are not their evaluators and are more hierarchically close to the nursing students themselves.

The other benefit of a sense of belonging is that students are able to create a positive mind set for learning. Tinto (1987) demonstrated that learners who possess a sense of

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belonging showed a positive perception of cognitive learning and a higher degree of persistence because the feeling of community drives them to make a contribution to the community. A sense of belonging also helps nursing students cope with anxiety. Some nursing students reported that they valued fitting in with the placement environment more than completing nursing tasks because lacking a sense of belonging caused them to experience learning anxiety, which undermined their performance (Nolan, 1998).

For nursing students, gaining a sense of belonging is about seeing staff as a source of learning and also about developing the core values of nursing. Students want to feel accepted because this is one way to feel more engaged with the nursing profession. One's sense of belonging greatly influences activity engagement and ways of thinking (Baumeister & Leary, 1995). Feeling engaged is how students develop their ability to care for others, which is the central value of nursing. If nursing students do not feel they are part of the group, it is unlikely that they will strive and try their best to contribute to patients' health and to the medical team. Furthermore, being recognized as a valued member has a profound effect on nursing students' development of professional self-concept, self-efficacy, and resilience (Levett-Jones, Lathlean, Maguire, & McMillan,

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2007). The findings from the current study showed students began to connect with their professional group, which helps them recognize their professional identity and develop professional self-concept which according to Cowin (2001) are the two essential predictors of nursing performance and retention rates.

According to Levett-Jones and Lathlean (2008), a sense of belonging is the prerequisite of learning and as the experimental group did not show a sense of belonging at the beginning of their placement, they were not ready to learn the core values of nursing. More importantly, they had to spend time seeking a sense of belonging before learning; they therefore did not feel that they had learned nursing practices effectively during this placement. On the other hand, the control group was in their classroom in which a sense of belonging already existed; they could therefore dedicate themselves to learning. Nursing students understand the benefits of being accepted by the team in terms of learning; therefore students were motivated to bond with staff to prepare themselves to learn during the placement because gaining a sense of belonging is followed by two main benefits: a sense of achievement and access to alternative learning resources.

5.5.3. Students' emotional intelligence

Students' use of emotional intelligence improves their relations with staff

5.5.3.1. Cote's Hierarchical Structure of Intelligence

If being accepted by other nurses is so important to nursing students, how do they socialize as novice trainees? On the basis of the hierarchical structure of general intelligence (Cote & Miners, 2006), when nursing students find themselves with a lack of cognitive intelligence during placement, they are likely to apply more emotional intelligence in order to demonstrate they are still intelligent. As figure 5.13 shows, the hierarchical structure includes cognitive and emotional intelligence which are in a compensatory relation to one another and share the same apex, the general intelligence (Cote & Miners, 2006). The literature defines general intelligence as 'the general efficacy of the intellectual process' (Ackerman, Beier, & Boyle, 2005, p. 32). Emotional intelligence refers to 'the ability to judge correctly the feeling, moods and motivation of an individual (Wedek, 1947, p. 133). Cognitive intelligence indicates cognitive learning and understanding such as memory and logic (Brody, 2004).

General Intelligence	
Cognitive Intelligence	Emotional Intelligence

Figure 5-13 Hierarchical structure of general intelligence by Cote and Miners (2006)

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Cote and colleagues (2006) observed that the use of emotional intelligence is more easily observed among those with lower cognitive intelligence who want to pursue a higher job performance and give a good impression to others. It is not surprising to find a positive correlation between the level of emotional intelligence and interpersonal relations in the workplace. Interestingly, this positive relation disappears when the individual's cognitive intelligence increases (Cote & Miners, 2006). In short, Cote and Miners' theory can provide a possible answer to nursing students' positive relations with staff during their placement because human cognitive and emotional intelligence compensate each other, thereby enabling an individual to achieve better performance.

5.5.3.2. Nursing students' emotional intelligence use in Cote's model

When learning in a workplace as a novice nurse, it is beneficial to use emotional intelligence to understand the emotions of patients and staff because it will help the novice act in an appropriate manner. By doing so, the students can connect with others as a way of showing empathy, learning, and being accepted by the team ultimately resulting in better performance. In the nursing profession, both professional ability and emotional intelligence have been viewed as core values (Benson, Ploeg, & Brown, 2010). Especially for emotional intelligence, a growing body of literature emphasises

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its influence on nurses' self-awareness and reflective skills that facilitate clinical practice and the quality of patient care (Freshwater & Stickley, 2004). Empirical studies found that nurses with higher emotional intelligence give better performance and have a higher commitment to their job (Codier, Kooker, & Shoultz, 2008). Higher emotional intelligence also predicts nurses' well-being and whether they are susceptible to any job-related stress (Karimi, Leggat, Donohue, Farrell, & Couper, 2014). Regarding the influence of emotional intelligence on staff relations, a ward leader's emotional intelligence has a positive relationship with subordinates' emotional and physical condition (Cummings, Hayduk, & Estabrooks, 2005).

Nursing students in the first time placements have higher motivation levels because they use their emotional intelligence in an attempt to enhance performance. It was found that almost 70% of junior nursing students showed an effective level of emotional intelligence during their placements (Benson et al., 2010) and the use of emotional intelligence is associated with support seeking (Montes-Berges & Augusto, 2007) which helps them eliminate the negative placement experience. This current research supports the finding that junior nursing students know the benefits of emotional intelligence and are willing to use it to befriend staff members. The findings from the

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study suggest that students applied their emotional intelligence to staff more than to patients. In Taiwan, junior nursing students are normally assigned to patients with a relatively stable condition. This means that some of their patients would be allowed to go home; consequently students may not have the motivation to establish a stronger relationship with these patients. In comparison, students have a stronger motivation to understand staff relations because this is to compensate for a lack of cognitive intelligence and being accepted. By compensating for this deficiency, the need for achievement can be fulfilled. Furthermore, students reported that being able to fit in with the group was more important to them than their professional performance (Levett-Jones & Lathlean, 2008).

5.6. Discussion on how nursing students learn from Legitimate Peripheral Participation

5.6.1. What does Legitimate Peripheral Participation provide for learning?

5.6.1.1. Structuring resources for learning in communities

One great difference for nursing students when they first enter to placement is the change of the knowledge and location (Lave and Wenger, 1991). When in the classroom, students learn about generic nursing knowledge but when in the ward, as

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outsiders, students need to transform and apply what they have learnt in classroom to context- specific knowledge and skills in order to meet the specification of the ward. Lave and Wenger (1991) explain that this is why trainees are involved in advanced knowledge and skills when in community of practice because at the beginning, the trainees are exposed to advanced knowledge and skills in the ward and later on, they need to demonstrate whether these advanced skills.

On the basis of Lave and Wegner's theory, the first step in legitimate peripheral participation is that learners have the chance to re-structure they their knowledge and skills. This is the same case in nursing placements, students are assigned to different ward so they can observe and experience how nursing expertise develops. To learn 'the hospital way' plays an important role for nursing students to get legitimate peripheral access. For example, when nursing students learn a different method of dressing a wound in different wards (e.g. in a burns unit or Emergency Room), they have gained an opportunity to re-shape their knowledge and more insight about community of practice because nursing practice may vary, depending on which community (ward) they are in.

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In the current study, the results suggest the participants have developed good relationships with staff. According to Lave and Wenger (1991), in order to re-structure knowledge, the trainees need to learn from their ‘near peer’ (p.93) which includes staff or other trainees. Interestingly, the scholars point out that it is commonly seen that the relation between the apprentices and other apprentices or even other mentors often create more learning opportunities, rather than students’ own mentor. They explain it is sometimes because the trainees have too much respect to their mentors and distance exists between trainees and mentors. The relation between trainees and teachers is therefore not strong. An empirical study by Hsu (2006) also indicates why, in Taiwan, nursing students are not so close to the clinical teacher. Hsu observed that clinical teachers rarely show affective behaviour such as praise, support, friendliness with student in clinical setting, as the famous Chinese proverb says: “an excellent student is trained by a strict teacher”.

We should note it that in Taiwan, the clinical teachers are often designated by schools and they do not always teach students in the same wards. That is to say, the staff often know about the culture of the ward more than the clinical teachers, which may push

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nursing students to turn to staff as a learning resource, at the same time students also embark their legitimate peripheral participation. Students used to see teacher as the main source of knowledge but now they shift their focus to the community member so they have alternative learning materials that contain high level of content-specific skills and knowledge. repertoire

5.6.1.2. Getting access

The purpose of clinical placements is to allow nursing students to have access to specific competence so that they can peripherally participate as outsiders. Lave and Wenger (1991) claim that this process includes not only the use and understanding of techniques and artefacts but also culture. Especially the access to the workplace culture, it explains why in the current study, although students did not gain much confidence in nursing skills, they still became much more confident working with staff after the placement. This can be seen as a sign of learning workplace culture.

To become a member in a community requires access to many resources, which is time consuming. It is also the case for nursing students. Lave and Wenger (1991) mentioned that in order to fully participate, junior members certainly need to learn to engage with

the technologies and knowledge of everyday practice as well as its cultural life. The term 'technologies' here has a broader concept that includes specialised knowledge and skills and certain equipment needed for practice. For novice, learning content-specific technology and skills is often the most challenging part. For example, coming into the ward with the generic knowledge learnt in classroom, nursing students often realise what they learnt is inadequate. This is in line with Lave and Wenger's explanation that the engagement with technology can be extremely varied depending on the form of the participation enabled by its use. This is also where the 'theory and practice' gap exists and the process of peripheral participation begin to become difficult because of the gap. Medical knowledge and skill is considered 'hard knowledge' and it is accumulated based on theory and experience, comparing to medical knowledge, understanding the ward culture seems a more accessible. By knowing the routine work and the 'underlying rules' in the ward as well as staff's work habits and personality, nursing students start to create their view of nursing job and their professional identity. These are part of the criteria for legitimate peripheral participation according to Lave and Wenger (1991) and Wenger (2006).

5.6.1.3. Discourse and practice

It is apparent that language plays an essential role when knowledge is transmitted in peripheral participation (Lave and Wenger, 1991). As noted by Jordan (1989), in order to become a legitimate participant, trainees are required to learn how to talk (and be silent) like their senior members. Language, according to Hyland and Tse (2012), is a powerful tool for proclaiming one's connection with certain communities, and has the power of representing people in particular ways. In a similar fashion, by accurately using the language in a group, people gain credibility and approval as being the members of it (Lu, 2016).

The power of the language use is notably essential in nursing practice. An empirical study conducted by Lu (2016) demonstrates how crucial it is to be able to communicate with colleagues with medical terminology in English. One example from Lu's research suggests that when nurses did shift report to the colleague who would take over the next shift, for most of the time they communicated in Chinese but they always switched to English whenever there was a need for medical terminology. Lu explains there are reasons for nurses' code switching. First, this is due to patients' information protection

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as the nurse's station is a public area, it is more likely that patients' conditions will be kept private if professional terminology is used during shift report. The second reason is related to the identity issue. Using English medical terminology allows nurses to demonstrate their professionalism and understanding in the medical field and this helps staff's development of professional self-concept.

In the current research, the participants developed positive relation with staff during the placement. This also indicates students were allowed to closely 'observe and imitate' how nurses communicate with professional jargon. As novice, nursing students are structuring their view to nursing work and developing their professional identity. In this case, students have more reasons to approach staff and begin to 'observe and imitate'.

It should be noted that it is easier for students to observe the power of professional language use from staff nurses rather than their clinical teachers. As mentioned earlier, the clinical teachers in Taiwan are members of the school rather than the ward so clinical teachers do not have direct communication with the nurses therefore it is more difficult for students to learn 'how to talk like a member' of the community of practice

from teachers. Thus, watching how senior members talk to each other is one of the efficient ways to conceptualise what nursing is about.

5.6.2. Level of sense of belonging is the key for the prediction on staff relations

This section focuses on comparing the existing literature and the findings of this research, particularly on the sense of belonging in communities of practice. What distinguishes the literature and this thesis on this topic is that the level of working environment familiarity. Most of the empirical studies invited full time employees while this thesis examines if the outcome occurs to trainees who just enter a workplace.

People with the mastery approach goal tend to develop better interpersonal relations because their desire for mastery learning makes them see other people's advice as a source that can help them improve (Poortvliet & Darnon, 2010). The employees with the mastery approach goal tend to maintain good relations with managers and colleagues to access help. It is worth noting that the research context of these empirical studies focused on office based staff (Janssen & Van Yperen, 2004). The participants were full time staff and had already established a connection with other employees

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before the empirical research began. The arguments made by Poortvliet and Darnon (2010) may not be applicable to trainees who have recently joined a new workplace. During the four week placements of this research, the participants entered the ward without prior connections with staff. From the decline of the mastery approach goal, it can be concluded that students established relations with staff for reasons other than learning, as learning interest and a desire for mastery learning were not a priority for students' first time placement.

Nursing students use their emotional intelligence to gain a sense of accomplishment by developing bonds with staff to gain acceptance. In addition, positive staff relations during placements are seen as a sign of success (Levett-Jones & Lathlean, 2008). Wenger's community of practice supports the fact that nursing students have to learn through interactions with the community so that they can engage with the profession, develop a repertoire, and reshape their knowledge. Nursing students cannot achieve these learning aims without initially being accepted by staff because their learning process would more challenging.

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Previous literature has suggested that the mastery approach goal positively predicts an interpersonal relation in the workplace, which means the stronger the mastery approach goal is, the better the interpersonal relations will be in the workplace. This is because the desire for mastery learning makes the individuals with the mastery approach goal want to connect with colleagues to access all potential learning sources. When learners are in a familiar environment where they are certain that their learning needs can be supported, they choose to enhance their cognitive knowledge in order to contribute to the group (Tinto, 1987), thereby motivating their mastery learning. The results generated from this study are not consistent with the literature as the experimental group's mastery approach goal declined, but their confidence of staff relations still increased during placement.

According to the regression outcomes in terms of how much mastery approach is able to predict staff relations, for the experimental group, the percentage that data variation explained was less than 5%; but in the control group, there was 11% of data variation. This outcome indicates that the experimental group's mastery approach goal could not reasonably predict staff relations when the participants were not in a setting in which they find a sense of belonging. This research suggests that the mastery approach goal

is unable to reasonably predict interpersonal relations because nursing students cannot learn effectively from the nursing community in an unfamiliar learning environment. Students need to find ways to be accepted by the medical team prior to learning. In this circumstance, it is not learning interests that lead to beneficial staff relations; instead, it is the desire to be accepted that leads to positive relations with staff. When an individual is new to the workplace, the desire to be accepted may be stronger than the desire to acquire mastery learning. In conclusion, nursing students need to feel accepted by the team before they can learn and in the first time placement, nursing students seek a sense of belonging in the workplace prior to their mastery learning in nursing.

5.7. Implications for the study

5.7.1. Enhance students' self-concept, starting by improving the quality of feedback and teacher-student relations

In this study, students' loss of interest in learning was observed through the decline of the mastery approach goal. It is common for nurses not to perform well in their first placement, but undesirable performance and a lack of confidence can be improved through teachers' feedback for students to learn from their mistakes. Conversely, students' confidence also influences how they interpret the feedback from teachers.

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Students with higher self-esteem tend to have a positive and optimistic interpretation when they receive feedback (Young, 2000). Higher self-esteem drives people to make effective use of constructive information provided by tutors and link this information with their performance. Though students with lower self-esteem often miss the true purpose of feedback and are more likely to take feedback personally (Clynes & Raftery, 2008). This study supports the idea that the first step towards the enhancement of students' self-perception is to improve the quality and delivery of feedback.

If making mistakes is unavoidable for junior nursing students, feedback is particularly essential at this stage due to its function as guidance tool and its ability to enable students to learn from their mistakes. Novice nurses heavily rely on feedback because it is one of the most effective ways for them to improve and monitor their own learning progress (Daelmans et al., 2006). Most clinical teachers were unable to provide adequate constructive feedback; for example, it has been reported that students sometimes find that feedback is not given on time, is not constructive, and can even be somewhat personal (Raftery, 2001). Little praise and encouragement can be found in feedback, which causes negative attitudes towards learning (Cahill, 1996). For clinical teachers, the strategies and principles of giving feedback can be taught in teacher

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training. This study suggests that teacher training should pay attention to strategies and to teacher-student relations so that informative feedback could maximise its benefits to students. The next section will elaborate the potential challenges between students and their clinical teachers which influence students' interpretation of their feedback.

It can be problematic to develop mutual trust between teachers and students if teachers are inexperienced and unable to spend adequate amount of time with each student. In Taiwan, each clinical placement for junior nursing students is normally four weeks long. With such a short period of time, it can be difficult for novice nursing students to build mutual trust with their clinical teachers; this is especially the case when the clinical teachers in Taiwan are given a heavy workload (Hautala, Saylor, & O'Leary-Kelley, 2007; Wu, Liu, & He, 2013). This problem deserves nursing researchers' attention because, when a good teacher-student relation exists in clinical learning, students are more likely to trust the teacher and believe that the feedback they receive is beneficial (Gillespie, 2002). Teachers' experience is the key for the development of this relationship, especially in short and intensive placement. In terms of the experience of clinical teachers in Taiwan, a Taiwanese study reported that among 419 clinical teachers, 65% of the participants had less than five years of experience (Yang, Kao, &

Huang, 2006). This empirical study also implies a potential problem in the quality of feedback given due to teachers' lack of clinical teaching experience. For example, the literature identifies that some novice supervisors find it difficult to criticise students' mistakes because they worry students would feel upset and their relations with students would be sabotaged (Clynes & Raftery, 2008). When teachers' feedback includes no critical information, trainees' lose their chance to improve and the teacher-student relationship would only remain superficial because there is no chance for the discussion of sensitive issues (Dohrenwend, 2002). Mutual trust influences how students interpret the feedback, so when the teacher-student relationship always remain superficial, it is difficult for students to truly benefit from teachers' advice.

5.7.2. Paying attention to the importance of a sense of belonging in nursing education and raising staff awareness of the benefits of teaching trainees

The nursing literature has identified the difficulties that students often encounter in clinical settings such as reality shock (Cowin et al., 2006), and feeling incompetent and unsupported (Wray et al., 2012). Empirical studies suggest that socializing with a medical team can work as a buffer to help students tackle these difficulties (Cowin &

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Hengstberger-Sims, 2006). The literature and the results of this study recommend that students need to develop relations with staff before they undergo workplace learning. Nevertheless, the importance of getting on with staff is often overlooked in the nursing curricula and clinical placements. For example, based on the placement learning aims from a nursing school in Northern Taiwan, the only learning objective that relates to students' relations with staff is stated as follows: 'nursing students should be able to learn and recognize their role and function in the medical team', which focuses on students' professional competence. This learning goal is listed as one of the placement objectives, but the assessment for this part cannot be found in the final evaluation. Such a gap indicates that Taiwanese nursing education has been ignoring the interaction between students and the medical team.

To help students develop their relations with staff faster without increasing the staff workload, clear protocols need to be outlined by hospitals and schools regarding assisting students' learning. Students need to be guided in schools on how to approach staff at an appropriate moment and with politeness, because it is reported that assisting students increases staff workload (Huybrecht, Loeckx, Quaeyhaegens, De Tobel, & Mistiaen, 2011). In addition to improving students' awareness of how to approach staff,

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the staff members need to be informed that supporting students also benefits themselves. This is because by offering knowledge and skills, staff gain knowledge about today's nursing educational processes and the latest academic materials which enhance their own learning skills, job satisfaction, and potential career advancement (Koskinen & Tossavainen, 2003; Sword, Byrne, Drummond-Young, Harmer, & Rush, 2002). Without emphasising benefits, there is little motivation for staff to voluntarily provide assistance to nursing students and to establish relations with students on top of their heavy workload.

The results of this study showed that students had a higher self-concept of staff relations after the placement. This indicated that the participants perceived friendliness from the staff and felt positive about their relationships. One factor that need to be considered was that all the participants in this experiment went to teaching hospitals. The staff in teaching hospital might have more awareness about their responsibilities to students and were more willing to teach students and accept them as part of the team. However, this is beyond the scope of this thesis and need further investigation.

5.7.3. Including emotional intelligence in the workplace and in the nursing

curricula

It has been proven that integrating emotional intelligence in curricula effectively improves nursing students' development of interpersonal relations (Smith, Profetto-McGrath, & Cummings, 2009), especially with patients and family relations (Foster, McCloughen, Delgado, Kefalas, & Harkness, 2014). The literature focusing on emotional intelligence with staff is inadequate. This study addressed the need to help students develop a certain level of emotional intelligence for collegial relations before they go on placement because the nature of the nursing profession is based on teamwork (Cadman & Brewer, 2001; McQueen, 2004). It has been recommended that, to have a comprehensive and robust framework for emotional intelligence education, the nursing curricula should include not only the significance of relations with patients and family, but other 'key stakeholder perspectives' (e.g. students, academic and clinical staff, patients, family, and the health service) (Foster et al., 2014, p. 516). A recent report indicates that better emotional intelligence reduces negative interpersonal events such as workplace bullying (Bennett & Sawatzky, 2013). This helps to alleviate the common issue of tense relations with staff that intensifies students' anxiety during their placement.

5.8. Directions for further study

5.8.1. Further study on emotional intelligence: Bar-On's theory

From an analytical perspective, emotional intelligence can be quantified, which allows the current research answers whether students decrease their use of emotional intelligence when they gain more cognitive intelligence. The analysis can be done through correlation and regression for participants' cognitive intelligence and emotional intelligence. There are a few well-developed framework of emotional intelligence: (1) Goleman (1998) suggests that understanding one's and others' feelings facilitates motivation and emotion management ; (2) Mayer and Salovey (1997) argue that if individuals are able to reason daily life events with emotions, he would be able to use this skills to improve thoughts; (3) Bar-On (2006) conceptualises emotional intelligence by 5 subscales and focuses on how emotional intelligence helps individuals cope with personal, social and environmental change (Benson et al, 2010).

In order to collect more information about how nursing students use their emotional intelligence, the further study would adopt Bar-On's theory, which consists of the following dimensions: total emotional quotient; intrapersonal scale; interpersonal scale; stress management scale; adaptability scale; general scale. Bar-On's questionnaire suits nursing students more than other scholars' framework because the subscales are relevant to nursing

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workplace (Benson et al, 2010). These dimensions are also essential to be evaluated on students so that we can have more insights to their emotional intelligence development. For instance, the interpersonal subscale comprises empathy and interpersonal relation; stress management outlines students' stress tolerance and impulse control; adaptability includes reality-testing, flexibility and problem solving, lastly, general mood subscale helps educators identify students' level of optimism and happiness. There are full version and short version of Bar-On Emotional Quotient Inventory. For nursing students, the short version would be applied for further research because it contains 51 items, which can be completed in 15 minutes while the full version consist 141 items and takes 40 minutes to complete and participant fatigue is therefore more likely to occur.

5.8.1.1. The conceptual framework of Bar-On's model

The Bar-On states that cognitive performance is influenced by a combination of both social and emotional competencies. Emotional intelligence has been described as 'an ability to get along in the world' and is imperative for success in both personal and professional adaptation and coping strategy use (Harper et al, 2012, p.356). Moreover, the Bar-On's model is seen as a

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‘mixed’ model because it defines emotional intelligence as a mixture of emotional related competencies, personality traits, and dispositions (Codier, 2010; Rader, 2010; Smith et al, 2009). This model type is in contrast to the ‘ability’ model, which explains emotional intelligence is a more traditional way of defining intelligence. As a mixed model, the Bar-On model conceptualise that emotional intelligence is dynamic, changes over time, and is amenable to developmental activities (Harper et al., 2012).

As aforementioned, Bar-On’s model identifies five dimensions of emotional intelligence: intrapersonal, interpersonal, stress management, adaptability and general mood (see table 5-25). The intrapersonal dimension encompasses the ability to understand and express personal emotions, whereas the interpersonal element comprises the ability to understand and relate to the feelings of others. Stress management is the ability to manage and control personal emotions. Adaptability refers to the ability to problem solve and manage change. Finally, general mood incorporates the capacity to be positive and self-motivated. Each of these five factors is made up of competencies and skills that represent vital areas of emotional competence.

Table 5-25 Bar-on’s model of emotional intelligence

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Dimension	Sub-dimension
Intrapersonal (self-awareness and self-expression)	<ul style="list-style-type: none"> • Self-regard: Personal respect and acceptance
	<ul style="list-style-type: none"> • Emotional self-awareness: Recognition and differentiation of personal feelings
	<ul style="list-style-type: none"> • Assertiveness: Ability to express oneself without aggressiveness
	<ul style="list-style-type: none"> • Self-actualisation: Efforts to reach personal potential
	<ul style="list-style-type: none"> • Independence: Self-directed, self-controlled
Interpersonal (social awareness and interaction)	<ul style="list-style-type: none"> • Empathy: Sensitivity to feelings of others
	<ul style="list-style-type: none"> • Social responsibility: Concern for others demonstrated through contribution to social groups
	<ul style="list-style-type: none"> • Interpersonal relationships: Establishment and maintenance of 'mutually satisfying relationships'
Stress management (emotional management and control)	<ul style="list-style-type: none"> • Stress tolerance: Ability to cope with stress without becoming overwhelmed
	<ul style="list-style-type: none"> • Impulse control: Ability to remain composed in frustrating situations and control personal behaviour
Adaptability (change management)	<ul style="list-style-type: none"> • Reality testing: Ability to remain pragmatic and objective
	<ul style="list-style-type: none"> • Flexibility: Adaptability to changing circumstances
	<ul style="list-style-type: none"> • Problem solving: Ability to confront problem, define them, and methodically identify and implement possible solutions
General mood (self-motivated)	<ul style="list-style-type: none"> • Optimism: Positive approach to daily living

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	<ul style="list-style-type: none">• Happiness: 'Ability to enjoy life'
<p>Note. Source : Bar-On, R. (2004). Emotional quotient inventory technical manual. Toronto, Ontario: Multi-Health Systems. Bar-On, R., & Handley, R. (1999). Optimizing people: A practical guide for applying EQ to improve personal and organizational effectiveness. New Braunfels, TX: Pro-Philes Press</p>	

5.8.1.2. Further study on tracking how students apply emotional intelligence while advancing the years

There is a gap between junior and senior nursing students' perception to their relation with staff. This research has shown that nursing students were happy about their relations with staff, but some literature has suggested that students suffer from their strained interpersonal relations in the workplace. Further study is necessary to acquire a depth of understanding of emotional intelligence. For example, future studies could:

- 1) Track whether students decrease their use of emotional intelligence once they have more professional knowledge;
- 2) Explore the process of learning emotional intelligence, for example, how students understand the concept of emotional intelligence and how they learn it;
- 3) Consider how clinical teachers understand their own emotional intelligence.

It is worth investigating whether senior students use as much emotional intelligence in their encounters with staff as junior students. According to Cote and Miners (2006),

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emotional and cognitive intelligence are compensatory, which suggests that once students are more cognitively competent, they may apply less emotional intelligence so they would be less keen to maintain their staff relations as before, allowing more interpersonal conflicts to occur.

To understand whether students change their frequency or strategies of applying emotional intelligence, it is necessary to study the process of emotional intelligence use. Emotional intelligence can be understood as a 'threshold concept' (Foster et al., 2014, p. 516), which means nursing students' learning and use of emotional intelligence, can be difficult because the process involves a new way of accessing an idea (Meyer & Land, 2003). Students' development of emotional intelligence is less straightforward and more time consuming than the development of professional competence. It is recommended that future studies consider how students interpret and view this new concept and then apply it in the workplace. Through such research, it can be hoped that tense interpersonal relations, one of the major causes of nurses' attrition, can be alleviated.

Finally, teachers' emotional intelligence is also a crucial factor in the development of students' emotional intelligence. It has been reported that some clinical teachers are not sensitive enough about their own emotional intelligence (Freshwater, 2002). Without self-awareness, it is more difficult for teachers to guide students and help them understand the concept of emotional intelligence. There is very little Taiwanese research focusing on teachers' emotional intelligence, so it would be helpful to explore Taiwanese clinical teachers' emotional intelligence to ensure teachers can provide adequate guidance to their students.

5.8.2. Further study on a sense of belonging: focus on staff's opinions regarding students' desire to seek a sense of belonging

Further investigations could focus on the opinions of staff regarding nursing students' behaviour when seeking a sense of belonging. Although the current study showed that students felt confident about their relations with staff after the placement, the perspective of the staff involved is still unclear. More details would be revealed if the data included staff points of view on students being accepted because some empirical studies have reported that staff felt their workload increased when they needed to support nursing students. Most studies on emotional intelligence have focused on

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communication in nurse-patient relations for therapeutic purposes. An investigation based on staff perspectives could be used for developing the course of student-staff relations as part of communication skills training. Developing relations with staff were difficult for the participants of this study because they were adolescents and none of them had any previous working experience. Students were unable to acclimatise to the differences between their relations with classmates and staff in hospitals, so they were not sensitive enough to approach staff with proper manners.

5.8.3. Further study on students' perception of learning environment

In the literature of achievement goals and self-concept, researchers have been focusing on how students see their competence (Elliot, 1999; Elliot & Church, 1997) as well as students' perception of classroom environment (Church, Elliot, & Gable, 2001). For example, in an environment with strong emphasis on evaluation, students would adopt performance goal and focus more on their performance. Similarly, an advocate of normative performance is likely to hinder students' pursuit of mastery goal (Meece & Holt, 1993). However, how student perceive the workplace as a learning environment has not received enough attention among achievement goal theorists as learning in

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workplace has substantial differences from learning in classroom. For students' achievement goal adoption in vocational education, such exploration is essential for the future study.

In Ames' work (1992), different classroom characteristics have been identified as antecedents of the adoption of mastery or performance goals. More importantly, some empirical work also demonstrated that students' own opinion about classroom environment is more influencing than the objective environment in terms of goal adoption (Ames, 1992; Maehr & Midgley, 1991). The study by Church, Elliot and Gabe (2001) recognises that if students are more engaged to the lecture content, they would adopt mastery goal; if students perceive the class as evaluation focused, they would have higher performance approach goal; if students expect to receive harsh evaluation, it is more likely for them to adopt performance avoidance. The same variables (lecture engagement, evaluation focus and harsh evaluation) can be used to assess students' perception of workplace in order to understand if there is difference between how teaching has been delivered and received. The results of which also provide what influences students' achievement goal adoption during placement.

5.9. Limitations of this thesis

This section will focus on the limitations of the research undertaken, divided into three parts: duration, attrition and qualitative analysis.

5.9.1. Duration

The data for this research project was collected within seven months. A greater length of time spent on data collection would have allowed the author to capture a more accurate understanding of the changing pattern within achievement goals and professional self-concept. The current results show a change between the time period before and after placement, though continual monitoring would lead to more robust conclusions for each academic year. Long term motivation is a complicated research topic that requires longitudinal investigation, to enable greater understanding of in-depth reporting (Schunk, 2000).

5.9.2. Attrition

The attrition for this research project was thirty percent, though the low rate of T2 returns did not cause biased results (according to the statistical evidence given by the

Methodology Chapter of this thesis). Since hospitals taking part in the placements were inaccessible to the author of this research, class leaders were tasked with disseminating the questionnaires to every student taking part in the research project. A failure by one of the class leaders in carrying out these instructions was determined to be the root cause of the missing data, as it was subsequently found that not every student had received a questionnaire. Furthermore, longitudinal data collection requires participants' commitment and a high dropout rate is common in data sets where research is both voluntary and anonymous because of the lack of traceability. Methods to improve class leader commitment to the research project should be investigated perhaps with monetary awards, better training, or more appropriate communication methods.

5.9.3. Qualitative analysis

Qualitative data surrounding student feedback would reveal more information about what causes goals and self-concept to change, as suggested by the literature (Senko & Harackiewicz, 2005; Williams, Donovan, & Dodge, 2000; Winne, Muis, & Jamieson-Noel, 2003). Such qualitative data would also support the obtained statistical evidence and increase the robustness of the conclusions drawn as part of this research project. More specifically, qualitative data about how students' perceived competence can be

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explored because how an individual sees their own ability to complete the task plays a central part in achievement motivation. In a workplace learning setting, learning outcomes are not always straightforward, a quantitative measure may not be able to catch the fluctuation of students' self-perceived competence.

Nursing students enter the workplace as novices, their judgment about learning outcomes might be influenced by many factors, such as inadequate knowledge, anxiety so it would be more objective if students' learning outcomes could be also collected from other people's perspective, for example, clinical teachers and ward nurses. The opinions from others can be utilized to see if nursing students' self-perception matches their actual performance.

5.10. Summary

This research investigated nursing students in clinical placements, where learning is less straightforward and outcomes less predictable. Due to being outsiders, students felt that they did not belong to the environment in which they had been placed. This combined with the difficulties and frustrations encountered, meant that students' learning interests and desire for mastery learning declined and their desire for performing nursing practice did not improve, despite being in a performance orientated

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learning setting. In such circumstances, students knew they could not obtain a sense of achievement from their professional performance, so they looked for alternative ways to find such accomplishment by using other methods, such as developing beneficial relations with staff. For students in the first time placement, being accepted by staff was a higher priority than mastering nursing practices. Through applying their emotional intelligence when observing and understanding staff, nursing students could compensate their inadequate cognitive knowledge and gained a sense of achievement and developed good relations with staff.

Conclusion

Chapter 6 Conclusion

Conclusion

This study found that clinical placements had a temporarily negative effect on the mastery approach goal and no effect on performance goal although they were in a performance-oriented context. Such outcome implies the students have lost learning interests and the desire of mastery learning in nursing during placements; also they could not see the improvement in nursing after four-week practice in the workplace. Clinical placements provide a unique learning environment that shows students what nursing work is like in reality. Students need to integrate theory into practice in order to provide good nursing practice. They also work together with members of staff to learn team work. However, learning in the workplace brings ambiguous learning outcomes and a time consuming learning process. This can be the reason why students feel frustrated and consequently lose their learning interest and are unable to see their own progress.

While the mastery approach goal was found to be declined by the clinical placement, students' nurses self-concept was also found to be influenced by placement learning, where students' performance is emphasized. After the placement, the change of nurses' self-concept of nursing skill, such as care, knowledge, communication, should be easily observed, no matter if they are increased or decreased. However this is not the case in

Conclusion

the current thesis. Interestingly, the result in the current study revealed that, after the placement, students only improved their self-concept of staff relations while other types of self-concept, such as caring, communication and knowledge, showed no change. This finding suggests that students were keen to develop relations with staff and their experience was positive, but at the same time they did not feel more confident about their practical skills after the placement.

In this thesis, the researcher also combined the study of achievement goals and nurses' self-concept. The outcome reveals that, during clinical learning, the mastery approach goal cannot predict staff relations as adequately as what the literature suggests. The literature mostly examines full time employees in office; therefore the result in this thesis implies interpersonal relation might be developed for different reasons among trainees and full time employees.

Based on the findings above, this thesis argues that students' decline of the mastery approach goal is the result of lack of competence of nursing and the challenges from clinical environment which includes the theory-practice gap and the Problem-Based Learning approach. As for the increase of self-concept of staff relations, possible

Conclusion

explanations are (1) students know they need to learn nursing practice as much as they can during the placement and nurses are a good learning resource. Thus, in order to learn from nurses, students have to build good relations with them before asking questions; (2) from the perspective of sense of achievement, students are unable to gain sense of achievement from their nursing practice so, instead, they seek the sense of achievement through positive staff relations because having good relations with staff is also seen as a sign of success (Koontz, 2010). These two reasons motivate students to put efforts on establishing interpersonal relations and possibly they received friendly responses from staff therefore students feel more confident in getting on with staff. The researcher of this thesis proposed that why the mastery approach goal does not seem to predict interpersonal relation in clinical learning setting is because students have not found a sense of belonging from nurses. The participants in other empirical studies recruited full time employees and their sense of belonging had already existed. The existence of sense of belonging makes the employees with the mastery approach goal pursues good collegial relations in order to have more advice from their colleagues. However, in the current study, a sense of belonging does not exist when students begin their placement. This study demonstrated students are able to maintain good staff relation, despite the decline of the mastery approach. Such a result implies whether the

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individual has received a sense of belonging essentially influences how much the mastery approach goal predict individual' interpersonal relation.

It is apparently that nursing educators and curriculum designers need to reconsider the following to optimize the learning outcomes of clinical placements:

(a) Students' self-esteem can be greatly improved through teachers' feedback so the quality of feedback should be emphasized. Young (2000) pointed out that teachers' feedback giving strategies can be improved through their training but one should bear in mind that all the feedback giving strategies maximise their benefits if good teacher-student relations exist. A strong bond makes students trust the teacher and believe the feedback received is helpful (Young, 2000). Giving student critical feedback has been seen as an important process to improve the bond between teacher and students because it offers an opportunity for the discussion of sensitive questions for both parties (Dohrenwend, 2002). The teacher student relation would be stronger if the problem is solved (Dohrenwend, 2002). This thesis suggests that clinical teacher training should facilitate young clinical teachers to strategically give critical feedback so the teacher-

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student relation can be improved for students to read their feedback with positive and educational perspective.

(b) Nursing educators should pay attention to the development of students' sense of belonging in the workplace by guiding them in the use of emotional intelligence. At the same time, clinical teacher should also be cautious about if nursing students blindly obey nursing staff in the workplace for getting accepted (Bradby, 1990). Such a result implies students have the need for relevant knowledge and skills but how to appropriately make use of emotional intelligence to improve staff relations seems to be ignored in nursing curricula. The lack of guidance on emotional intelligence for collegial relation might explain why junior students in this research perceived positive staff relation during placement but a number of empirical studies suggest students and newly graduate nurses feel stressed about not getting along with the staff. Some curriculum advice for improving emotional intelligence has been proposed by Freshwater (1998b). An emotional intelligence curriculum should include some elements such as reflective learning experience, supportive supervision and mentorship,

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opportunities for working creatively with the arts and humanities and focus on developing self and dialogic relationships (Freshwater and Stickley, 2003, p. 96).

This research investigated the achievement goals and nurses' self-concept based on students' first time placement experience. The results expand the literature and place emphasis on the influence of outside classroom context. Based on research outcomes, this thesis hopes to raise clinical teachers' and policy makers' attention to feedback giving, importance of a sense of belonging and emotional intelligence. This research aims to provide a starting point for tracking the development of how placements gradually mould students' achievement goals and professional self-concept. With the supports from empirical results, more assistance can be adjusted accordingly to facilitate nursing students for the best of interests during placements.

Appendices

Appendix A (Questionnaires)

Questionnaire

Dear Students,

Thank you for your participation. This study is a part of my doctoral research on *The Relationships among Achievement Goals and Professional Self-Concept Change after a Practical Training.* This survey contains two questionnaires and the results will be available to your institution. Please inform me if you need a copy of the results.

The survey is completely voluntary and you may choose not to answer any question. These records will be kept private. Any publications from this study will not include any information that will make it possible to identify you as a participant. Records will be kept in a secure area and only the researcher will have access to them.

Contacts:

Student: Meng-Yin, Lin

Research Postgraduate

School of Education

Durham University

Email: credible1982@yahoo.com.tw

meng-yin.lin@durham.ac.uk

Supervisor: Dr. Richard Remedios:

Email: richard.remedios@durham.ac.

Part 1 Demographic information

1. Class: Department of Nursing 2— ____
2. Your make-up identification: ____ _
 - The first two space is the DATE of your birthday (e.g. born on June 1st, fill in 01)
 - The third and fourth space is the total strokes of your Chinese names (including surname)
 - The fifth and sixth space is the last two digital codes for the access of your campus email.

3. My previous job description in service module is relevant to nursing
- () strongly disagree
 - () tend to disagree
 - () neither disagree nor agree
 - () tend to agree
 - () strongly agree

Part 2 Questionnaires

AGQ(1)

Please choose the most appropriate answer in your current experience next to the statement.

Please answer the questions based on the subject "English"

	Extremely unlikely	Very unlikely	Unlikely	Neutral	Likely	Very likely	Extremely likely
1. It is important for me do better than other students.							
2. It is important for me to do well when compared to others in this class.							
3. My goal in this class is to get a better grade than most of the other students.							
4. I worry that I may not learn all that I possibly could in this class.							
5. Sometimes I am afraid that I may not							

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understand the content of this class as thoroughly as I'd like.							
6. I am often concerned that I may not learn all that there is to learn in this class.							
7. I want to learn as much as possible from this class.							
8. It is important for me to understand the content of this course as thoroughly as possible.							
9. I desire to completely master the material presented in this class.							

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10. I just want to avoid doing poorly in this class.							
11. My goal in this class is to avoid performing poorly.							
12. My fear of performing poorly in this class is often what motivates me.							

NSCQ(2)

Please choose the most appropriate answer in your current experience next to the statement. (1 refers to definitely false; 8 refers to definitely true.)

“If you have not had any experiences regarding practical training, please choose the most suitable answer depending on how you feel now. If you just returned from a practical training, please choose a suitable answer to express how you feel after this training”.

	Def init ely fals e 1	2	3	4	5	6	7	Def init ely tru e 8
1. I have the ability to care for my patients' needs.								
2. I enjoy working with other health professionals.								
3. I get a lot of enjoyment out of being a nurse.								
4. I find new nursing knowledge stimulating.								
5. I am recognised as the leader of the nursing team.								
6. Being a nurse gives me great enjoyment								
7. I am good at verbally communicating with colleagues and patients.								
8. I get a lot of respect for my nursing leadership skills.								
9. I gain a lot of professional pleasure from my relationships with colleagues.								
10. I am able to master new nursing knowledge.								

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11. I can easily relate to my colleagues.								
12. I like being a nurse.								
13. I enjoy communicating information and ideas with colleagues and patients.								
14. I look forward to taking further courses that improve my nursing knowledge.								
15. I get along well with other health professionals.								
16. I am proud to be a nurse.								
17. I can keep a nursing group together as a team.								
18. I am enthusiastic about nursing.								
19. I am constantly incorporating new nursing knowledge into my patient care.								
20. Taking care of patients is easy for me.								

	Def init ely fals e 1	2	3	4	5	6	7	Def init ely tru e 8
21. I can confidently communicate with patients and colleagues.								
22. I enjoy having nursing leadership responsibility.								
23. I am interested in caring for my patients.								
24. I have a good working relationship with other health professionals.								
25. I am respected as a nurse because of my nursing knowledge.								
26. Communicating effectively with patients and colleagues is easy for me.								
27. My work as a nurse is very interesting.								
28. I confidently approach nursing leadership tasks.								
29. I am confident about my ability to care for patients.								
30. I have the ability to communicate effectively with patients and colleagues.								
31. I look forward to caring for my patients.								
32. I am able to form good working relationships with other health professionals.								

Appendices

33. Good nursing leadership is easy for me.								
34. I am proud of my ability to care for patients.								
35. I enjoy learning new nursing knowledge.								
36. I am good at communicating with colleagues and patients.								

Thank you

Chinese Version (used in the main study)

問卷

親愛的同學:

首先感謝您的熱心幫忙!這是一份學術匿名問卷,目的在研究 (1) 你學習英文科的動機和 (2) 同學在實習前後的感受,所以沒有正確答案。但是要請同學在作答之前請先詳讀下方注意事項 1,2,3,4。若你在作答時發現任何問題,可來信告知研究人員,你也有權利停止填寫問卷,這不會對同學產生任何影響,本問卷資料僅供學術分析使用,絕不對外公開,請您安心作答,並祝您學業進步,事事順心。

注意事項

1. 請牢記您的匿名代碼(按下頁指示填寫),並勿與他人討論代碼

2. 第 3,4 頁請注意! 請就英文科和基本護理科的學習狀況作答

3. 第 5-7 頁請注意!! 若你尚未有實習經驗,請你依照對自己的評估給分(1 分為絕對錯誤,8 分為絕對正確) 若你剛結束時習,請你就實習之後的的感覺給分(1 分為絕對錯誤,8 分為絕對正確)

4. 答題結束請檢查有無漏答

研究人員:林孟穎

英國德倫大學 教育研究所

Email: credible1982@yahoo.com.tw; meng-yin.lin@durham.ac.uk

指導教授:Dr. Richard Remedios

Email: richard.remedios@durham.ac.uk

基本資料:

匿名代碼:為保護同學隱私,請按下列指示填寫此碼,第二次問卷也需填寫同一代碼,請牢記您的匿名代碼,並勿與他人討論

填寫指示(第 2 次問卷裡仍會給您相同指示):

1. 由上方空格從左邊數來第 1,2 格填入您的出生月份(7 月出生填 07)
2. 中間 2 格填您的姓名總筆畫(如:王大明總筆劃為 15,填 15)
3. 最後 2 格填您學校信箱密碼後 2 碼(英文字母或數字皆可,若忘記學校信箱密碼,可選最常用的信箱密碼後兩碼)

我覺得前一次工讀的工作內容和護理 () 非常相關 () 有些相關 () 一點點相關 () 完全無關 () 不知道

學科成績: (以本學期為主,未考期末者,期末成績免填)

英文科期中考成績_____ ; 期末考成績_____

基礎期中考成績_____ ; 期末考成績_____

AGQ (2) 以 v 作答 請就基本護理科的學習狀況回答 (1 分為絕對不同意, 7 分為絕對同意) 有些題目看似類似, 但仍有些微差異, 請同學仔細看題作答		絕對 不同意 1	非 常 不 同 意 2	不 同 意 3	中 立 4	同 意 5	非 常 同 意 6	絕對 同意 7
1.	我的成績勝過其他同學對我來說很重要							
2.	在這門課中, “和其他學生比起, 我表現算優異” 這對我來說很重要							
3.	我在此科目的目標是得到比多數同學都還高的分數							
4.	我擔心自己實際學到的不及我應該學到的							
5.	我期望能了解課堂內容到某一程度, 但我有時擔心無法達成							
6.	在這門課中, 我常擔心無法全部學會課堂上每一個該學的重點							
7.	我想盡力學會這門課中的所有知識							
8.	充分地了解這門課的內容對我而言很重要							
9.	在這門課中, 我迫切地想完全學會課本/講義中提到的知識							
10.	在這課堂上, 我只要別表現太差就好了							
11.	我在此科目的目標就是不要表現太差							
12.	害怕 “表現太差” 是驅使我念此科目的動機							

WSCQ (2) 以 v 作答 若你尚未有實習經驗, 請你依照對自己的評估給分 (1 分為絕對錯誤, 8 分為絕對正確) 若你剛結束實習, 請你就實習之後的感覺給分 (1 分為絕對錯誤, 8 分為絕對正確) 有些題目看似類似, 但仍有些微差異, 請同學仔細看題作答		絕對 錯誤 1	錯 誤 2	大 致 上 錯 誤 3	錯 多 於 對 4	對 多 於 錯 5	大 致 上 正 確 6	正 確 7	絕對 正確 8
1.	我有能力照顧病人的需要								
2.	我享受和其他醫療人員一起工作的感覺								
3.	身為一名護士, 我得到許多樂趣								
4.	對我來說, 新的護理知識技能有助於刺激臨床表現								
5.	從事護理工作使我快樂								
6.	我擅於和其他醫療人員及病人做口語上的溝通								
7.	和其他醫療人員交流時, 這份專業的關係讓我感到快樂								
8.	我能夠熟悉新的護理知識技能								
9.	我能夠輕易地和其他醫療人員建立關係								
10.	我喜歡當護士								

NSCQ (2) 以 ✓ 作答 若你尚未有實習經驗, 請你依照對自己的評估給分 (1 分為絕對錯誤, 8 分為絕對正確) 若你剛結束時習, 請你就實習之後的感覺給分 (1 分為絕對錯誤, 8 分為絕對正確) 有些題目看似類似, 但仍有些微差異, 請同學仔細看題作答	絕對 錯誤 1	錯誤 2	大致上 錯誤 3	錯 多於 對 4	對 多於 錯 5	大致上 正確 6	正確 7	絕對 正確 8
11. 我喜歡與其他醫療人員及病人溝通, 並交換資訊								
12. 我期待上進修課程來增進護理知識技能								
13. 我和其他醫療人員相處融洽								
14. 身為護理人員我感到驕傲								
15. 我對護理工作充滿熱情								
16. 我總是不斷地應用新的護理知識來照顧病人								
17. 照顧病人對我來說是件輕鬆的事								
18. 我能自信地與其他醫療人員和病人溝通								
19. 照顧病人是我的興趣								
20. 我和其他醫療人員維持著良好的同事關係								

NSCQ (2) 以 ✓ 作答 若你尚未有實習經驗, 請你依照對自己的評估給分 (1 分為絕對錯誤, 8 分為絕對正確) 若你剛結束時習, 請你就實習之後的感覺給分 (1 分為絕對錯誤, 8 分為絕對正確) 有些題目看似類似, 但仍有些微差異, 請同學仔細看題作答	絕對 錯誤 1	錯誤 2	大致上 錯誤 3	錯 多於 對 4	對 多於 錯 5	大致上 正確 6	正確 7	絕對 正確 8
21. 我因我的護理知識技能而受他人尊重								
22. 有效率地與其他醫療人員和病人溝通對我來說是件簡單的事								
23. 我的護理工作非常有趣								
24. 我對於自己照護病人的能力有信心								
25. 我有能力和其他醫療人員及病人有效率地溝通								
26. 我期待提供病人照護								
27. 我能和其他醫療人員建立良好的同事關係								
28. 我對於我的護理能力感到自豪								
29. 我享受習得新護理知識技術的感覺								
30. 我擅於和其他醫療人員與病人溝通								

問卷結束請檢查有無漏答感謝您

Appendix B (Consent Form)

CONSENT FORM

Proposal: Nurses experiences during their training.

In this study, we are keen to find out about the ways nurses think about their academic work during their training. There are no right or wrong answers, we recognise that you are all individuals and everyone will answer the questions differently. You were selected as a possible participant for this study because you were identified as a student who has not had any nursing training so far. I ask that you please read this form and ask any questions you have before agreeing to be part of the study. Please read this form and ask any questions you have before agreeing to be part of the study.

This study is being conducted by Meng-yin, Lin, a doctoral student at Durham University, UK.

BACKGROUND INFORMATION: The purpose of this study is to gain a better understanding of how nursing training influence nursing students' achievement goals and professional self-concept.

PROCEDURES: if you agree to be in this study, I would ask you to do these things:

- Read and sign the consent form. You may make a copy to keep for your records.
- Complete the Demographic Background form, and all the questionnaires.
- Return the consent form and complete the demographic background form, and the questionnaires to the researcher) by 2013 March 23.
- You will also receive the questionnaires again on 2013 June 28th. Please complete the questionnaires and return them by June 29th.

CONFIDENTIALITY: These records will be kept private. Your identifying codes and information will not appear on any publication from this study. That is to say, there will be no information in any publication to identify you as a participant. Records will be kept in a

secure area and only the research will have access to them.

RISK AND BENEFIT: The risks associated with participating in this study might be (1) when the researcher gives you the questionnaires after the class, it might take you 15-20 minutes to finish the questionnaires, that is to say, your break time will be decreased; (2) you might not want to participate in this study but you worry it might get you into trouble if you do not participate. I would like to emphasize that you will not have any punishment for not being a participant. The benefit of participation is information gained from this study may be used to help increase nurses' professional self-concept and increase student's learning outcome.

Group data may be used to improve syllabus and teaching materials at your institution.

VOLUNTARY NATURE OF THE STUDY: Your participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want to take part in the study. No one at your institution will treat you differently if you decided not to do so. You may change your mind to participate at any point.

If you would like to participate, you can firstly sign and return this consent form and I will give you the pretest questionnaires in three days. If you would like a copy of the study's results, please provide your email address below.

CONTACTS:

student: Meng-yin, Lin

Supervisor: Dr. Richard Remedios

You may ask any questions you have now. If you have questions later or need a replacement for a lost form, you may contact Meng-yin, Lin at :

H3.4 Brooks House

Parsons Field

Durham

DH1 3JP

Phone: 07925478953

Email: meng-yin.lin@durham.ac.uk

Appendices

STATEMENT OF CONSENT

I have read the above information. I have received answers to any questions I have at this time and I consent to participate in the study.

Participants' Printed Name _____

Participants' signature _____

I would like a copy of the study's findings sent to this email
address: _____

Chinese Version (Version approved by Institute of Review Board in Taiwan and used in the main study)

長庚醫療財團法人【基隆院區】長庚紀念醫院

林孟穎

受訪同意書

一、研究主題:實習對專業自我概念的影響和學習目標導向之關聯

二、簡介

您好，我們敬邀您參加一個學習動機和自我概念的研究。在您同意參加本研究之前，研究主持人會向您說明這份受訪者同意書的內容並給予您充分時間考慮，請您再次徹底閱讀這份受訪者同意書，並且問清楚任何問題。此外，要不要受訪，完全是自願性質，如果不同意受訪，並不會影響到您的正當權益

三、研究基本資料

1. 計畫編號：

IRB 案號：101-5314B

2. 收案單位：馬偕醫護管理專科學校護理科

3. 委託單位：無

4. 主要主持人：李筱薇 服務單位：急診加護病房

職稱：急診加護護士 N3 電話：02-84313131 轉 2815

協同主持人：林孟穎 服務單位：

職稱：英國德倫大學教育系博士研究生 電話：0928629780

(必填)5. 受訪者姓名：

性別：

出生日期：

通訊地址：

聯絡電話：

四、研究目的:此研究目的是匿名問卷來了解(1)同學對於基本護理學和英文科的學習動機是否改變,若觀察到改變還能深入研究是何種原因造成改變,將來在課程設計上就能排除降低學習動機的因素;(2)基護實習對於同學的專業自我概念的影響,若觀察到實習會降低同學的自信,就能深入研究是那方面的信心降低,也可研究

林孟穎

五、研究方法與程序說明

1. 收案人數及收案地點。

此次研究對象為樣本數為馬偕醫護管理專科學校護理科護理科二年級學生,收案人數100-200人,收案地點為馬偕醫護管理專科學校護理科。

2. 取得受訪者同意書的方法與程序。

取得校方同意後由研究人員之一林孟穎說明研究,並發給受訪者同

意書，請受試者填寫，同時告知保障個人隱私及隨時退出研究之權利，受試者若有疑慮可當場提問或聯絡研究人員林孟穎。亦請受試者將同意書帶回家並取得監護人簽名。

3. 說明每組之分組方法。

受試者以是否於2013年6月進行基護實習為分界，前往實習的班級為實驗組，未需實習之班級為控制組(實驗期間無實習)。

4. 說明訪問或填寫問卷之次數及每次需花費的時間。

此計畫包含一份匿名問卷，須做三次(兩次間隔約2-3個月)，每次作答時間約15分鐘。

5. 說明訪問或問卷發放與回收之方式。

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(1) 問卷發放及回收皆由研究者／代理人完成，匿名問卷皆可利用課餘時間完成，(2) 研究者於問卷發下前親自解釋研究目的和參與者的權利；(3) 前測問卷將於4月29日發放；(4) 為搭配同學實習，第一次後測問卷發放時間於6月及7月之間；(5) 第二次後測問卷分別於9月4號和11月21日發放。

六、可預期之風險、副作用、發生率及處理方法：

(1) 您回答問題時可能覺得困惑(如，同時符合兩個選項)這

時只要選擇和自己感覺較相近的即可,不需擔心對錯。亦可隨時與研究主持人連絡,尋求說明或協助。

(2) 所有的資料以不記名方式,將在編碼後輸入研究人員私人電腦並加密碼鎖,外人無法開啟檔案。

(3) 若問卷時間冗長,讓同學身心感到不適,請隨時與研究主持人連絡,尋求說明或協助。您也可隨時提出退出本研究,我們將會尊重同學意願。

七、預期研究效果

在台灣,對於增強護理科學生學習動機和自我概念的研究不多,所以同學參與這次研究,對於台灣的護理教育研究有著實的貢獻,您的問卷在未來可幫助老師們調整上課進度和方式,以增進同學的學習效率和信心

林孟穎

八、緊急狀況之處理

受訪過程中,若您感到任何的不適,將立即中止(問卷或訪談),並提供必要之協助。您有任何問題也可隨時連絡本計劃負責人員。

緊急聯絡人：林孟穎

電話：03-3503769/0928629780

電子郵件：credible1982@yahoo.com.tw

九、補助、費用負擔與損害賠償：

1. 補助：請無償協助
2. 費用負擔：參加本研究您不需負擔任何費用
3. 損害賠償：如果是因為本研究所訂計劃造成您的損害，本院與研究主持人將依法負損害補償責任。

十、保護隱私與機密性

1. 將會有一個研究代碼代表您的身分，此代碼不會顯示您的姓名、身分證字號、住址。
2. 對於您訪查的結果及診斷，研究主持人將持保密的態度，小心維護您的隱私。如果發表研究結果，您的身分仍將保密。
3. 請您亦瞭解若簽署同意書即同意您的訪查紀錄可直接受監測者、稽核者、研究倫理委員會及主管機關檢閱，以確保本研究過程與數據符合相關法律及法規要求。上述人員並承諾絕不違反您的身分之機密性。

十一、研究之退出與中止

受訪者或立同意書人有權在無任何理由情況下，隨時要求終止參與研究，此將不會減損您的正當權益與法律權利。研究主持人或贊助廠商亦可能於必要時中止該研究之進行。

十二、受訪者權利

1. 研究過程中，凡可能影響您繼續接受訪查研究意願的任何重大發現，都將及時提供給您。

2. 如果您在研究過程中對研究工作性質產生疑問，對身為受訪者之權利有意見或懷疑因參與研究而受害時，可與本院之人體試驗倫理委員會聯絡請求諮詢，其電話號為：(03)319-6200 轉 3706。

十三、試驗成果及權益歸屬

如本試驗計畫成果產生學術文獻發表、實質效益或衍生其他權益時，亦同意無償捐贈給本院作為疾病預防、診斷及治療等公益用途。(若委託人非為本院者，應依研究委託內容記載。)

十四、聲明

本研究內容及同意書已經由林孟穎完整口頭告知及說明，受訪者本人或/及法定代理人已充分瞭解並同意。

***本同意書一式二份，林孟穎已將受訪者同意書之副本交給您。**

(必填)A. 受訪者 (學生)：

_____ (正楷)

_____ (簽名) 日期：____年____月____日

(必填)B. 立同意書人/法定代理人/(有同意權人/家長)：

_____ (正楷)

_____ (簽名) 日期：____年____月____日

與受訪者之關係：_____

C. 研究主持人：

_____ (正楷)

_____ (簽名) 日期：____年____月

林益穎

第十二條 研究對象除胎兒或屍體外，以有意思能力之成年人為限。但研究顯有益於特定人口群或無法以其他研究對象取代者，不在此限。研究計畫應依審查會審查通過之同意方式及內容，取得前項研究對象之同意。但屬主管機關公告得免取得同意之研究案件範圍者，不在此限。研究對象為胎兒時，第一項同意應由其母親為之；為限制行為能力人或受輔助宣告之人時，應得其本人及法定代理人或輔助人之同意；為無行為能力人或受監護宣告之人時，應得其法定代理人或監護人之同意；為第一項但書之成年人時，應依下列順序取得其關係人之同意：

一、配偶。

二、成年子女。

三、父母。

四、兄弟姊妹。

五、祖父母。

依前項關係人所為之書面同意，其書面同意，得以一人行之；關係人意思表示不一致時，依前項各款先後定其順序。前項同一順序之人，以親等近者為先，親等同者，以同居親屬為先，無同居親屬者，以年長者為先。

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